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ABSTRACT

This report proposes a curriculum model for education of students in the age group of 10 to 14 years in Scotland. It also proposes a policy of autonomy within guidelines so that secondary schools and their associated primary schools can develop new partnerships for collaborative planning of curriculum, pupil care, learning support, assessment, recording, and reporting. Section 1 addresses the overall aims of the 10-14 program, reviewing its history, discussing the major issues in education at the middle level, and presenting the desirable outcomes of the program with respect to curriculum and learning. Section 2 describes the curriculum design in detail, discussing (1) the process of collaborative planning; (2) specific curricular goals of the 10-14 program; (3) the range of the curriculum; (4) essential conditions for education 10-14; and (5) ways and means. Section 3 focuses on the child as a learner, discussing the processes of learning, teaching, assessment, recording, and reporting and pupil care. Section 4 develops proposals for collaborative management of education 10-14, while section 5 discusses major implications of the program for the educational system. Appended are five supplementary sections tagged to portions of the text, along with a list of studies commissioned by the program directing committee and a list of sources and contacts for consultation, advice, and evidence. A list of figures is also included. (TE)

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EDUCATION 10-14 IN SCOTLAND

Report of the Programme Directing Committee

A CCC DISCUSSION PAPER

EA 020 300

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Consultative Committee on the Curriculum 1986

Consultative Committee on the Curriculum

EDUCATION 10-14 IN SCOTLAND

Report of the Programme Directing Committee

A CCC Discussion Paper 1986

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FOREWORD

This Report is the outcome of some six years' work by the CCC. It began with a Starter Paper which sought to identify the significant issues in the education of the 10 to 14 age group who account for nearly half the pupils in the school system at any one time. The present Report was produced by a Programme Directing Committee who consulted widely, promoted and observed fieldwork, commissioned studies on particular aspects of education 10 to 14, and supported and encouraged education authorities, schools and colleges who were carrying out innovative and experimental work with this age group. The recommendations in the Report derive from this work.

The Report suggests no fundamental change in the structure of education 10 to 14. It calls, however, for greater continuity between primary and secondary schools. It rejects the notion that S1 should be seen as "a fresh start", claiming that education 10 to 14 should be "coherent, continuous and progressive".

The Report puts forward a curriculum model for education 10 to 14 and proposes a policy of autonomy within guidelines so that secondary schools and their associated primary schools can develop new partnerships for collaborative planning of curriculum, pupil care, learning support, assessment, recording and reporting. It suggest a gradualist approach with no need to change everything at once, even if this were possible.

Although the broad thrust of the Report was welcomed by the CCC at a Conference in February 1986, the far-reaching implications of some of the recommendations has persuaded the Committee to seek wider advice. The Report is therefore published as a consultative document and a parallel study of costs is expected to be published in Autumn 1986. Before finalising its advice to the Secretary of State, the CCC will have regard to reactions to the Report and to the study of costs.

Comments should be addressed to Mr D R McNicoll, Secretary of the CCC, New St Andrew's House, Edinburgh EH1 3SY, not later than 30 November 1986.

David G Robertson,
Chairman, Education 10 – 14 Programme Directing Committee

James Munn,
Chairman, Consultative Committee on the Curriculum

EDUCATION 10 — 14 IN SCOTLAND

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EDUCATION 10 — 14 IN SCOTLAND

MEMBERSHIP OF THE PROGRAMME DIRECTING COMMITTEE AT MARCH 1986

David G Robertson	Director of Education, Tayside Region, **Chairman**
J K Beattie	Education Department, Jordanhill College of Education, **Secretary/Development Officer**
Andrew McKenzie	Rector, Inverkeithing High School, Fife
Dr S E McClelland	HMCI, Assessor
David Menzies	Adviser in English, Lanark Division, Strathclyde Region
John Mitchell	HMI, Assessor
John Mowat	Curriculum Co-ordinator, Borders Region
Edward Mullen	Headteacher, St Margaret Mary's Secondary School, Glasgow
George Paton	Depute Director, Scottish Council for Educational Technology
Nick Pepin	Headteacher, Glenmanor Primary School, Dunbarton Division, Strathclyde, now Primary Education Department, Jordanhill College of Education
Doreen Shiach	Adviser in Primary Education, Grampian Region
Alan Shuttleworth	Parent representative

The following have also served on the Committee:

Janet Barr	Headteacher, Tollbrae Primary School, Airdrie, Strathclyde
Douglas Campbell	Rector, Bell Baxter High School, Cupar, Fife
Gillies Campbell	Principal Teacher of Art, James Gillespie's High School, Edinburgh

Arthur Cumming	Headteacher, Cathkin High School, Glasgow
William Gilmour	Headteacher, Silverwood Primary School, Kilmarnock
Eileen Lorimer	Principal Teacher of Remedial Education, Linksfield Academy, Aberdeen
Norman Masson	Adviser in Primary Education, Lothian Region
Stroma Riungu	Headteacher, Craigie Primary School, Perth
Robert Tait	Principal Teacher of Music, Larbert High School, Central Region

The following have also acted as assessors for the Scottish Education Department:

Tom Williamson	HMCI
Alec Ferguson	HMCI

PROGRAMME CO-ORDINATORS

Frank Adams	Scottish Curriculum Development Service, Edinburgh Centre
Sydney B Smyth	Scottish Curriculum Development Service, Edinburgh Centre

FIELD OFFICER

Wilson Bain	Education Department, Moray House College of Education, Edinburgh.

CHAPTER I

HISTORY AND BACKGROUND OF THE 10 — 14 PROGRAMME

1.1 The Education 10 — 14 Programme of the Consultative Committee on the Curriculum (CCC) was set up in November 1981 following the approval of the Secretary of State with the following terms of reference:

"Subject to the terms of reference of the CCC, in co-operation with all CCC Committees and working closely with education authorities and other interested bodies, the Programme Directing Committee shall

(1) initiate, promote and supervise a programme of development work on the education of the 10 — 14 age group in Scottish schools;

(2) for the purpose of the development programme, establish what experimental work in the education of the 10 — 14 age group is being undertaken by education authorities and other bodies and seek to co-ordinate such work;

(3) within resources made available for it for that purpose, arrange for such feasibility, pilot or research studies as may be required for the development programme to be undertaken into any aspect of education of the 10 — 14 age group by education authorities or any other appropriate bodies or individuals;

(4) present an interim report to the 5th CCC by April 1983;

(5) present a final report and/or a draft Curriculum Paper based on the programme to the CCC by June 1985;

(6) identify and where appropriate quantify the implications for staffing and resources of any recommendations which these reports may contain".

1.2 All regional and island authorities, Scottish Colleges of Education, University Departments of Education, all committees of the CCC structure were contacted and invited to inform the Programme Directing Committee (PDC) of any activities which would enable PDC to fulfil its remit. As well as the responses to its enquiries, PDC also had much preliminary material to come to terms with, not least of which was the CCC's own Starter Paper on 10 — 14 which had been issued in 1980 and the report of the CCC Conference in 1981 which had discussed responses to the Starter Paper and had recommended the setting up of the Education 10 — 14 Programme.

1.3 The CCC Starter Paper had drawn upon a wide range of previous reports and papers from the Advisory Council Reports [1] of 1946 and 1947 to the Munn, Dunning and Pack Reports [2] of 1977 and the HMI Report on Children with Learning Difficulties [3] of 1978. The Starter Paper was able to refer to several reports on primary education such as the Primary Memorandum [4] of 1965 and the HMI Progress Report [5] of 1971 which formed the basis for a rationale underlying the primary stages. However a definitive statement on the S1/S2 curriculum was not available. The SED's *Circulars 600 and 614* [6] had recommended that S1 and S2 should be a "period of orientation" and the HMI report on *The First Two Years of Secondary Education* [7] described a system in transition in which, among other developments, improved liaison between primary and secondary schools was noted. The Ruthven Report [8] as early as 1967 had expressed concern over the nature of the S1/S2 curriculum and the danger of it becoming too demanding for pupils, as well as being overcrowded.

1.4 Based on the background of these and other reports, the CCC Starter Paper invited views on how to reconcile, in the pupils' interests, the differences between primary and secondary schools which arose from differing views of the curriculum, different training, organisation and management. The CCC conference considered the responses to the Starter Paper and concluded that there was an unnecessarily large discontinuity between primary and secondary education which might be reduced by better liaison procedures and attention to the curriculum and teaching methods at 10 — 14. Both the Starter Paper and the Conference agreed upon the need for a thorough analysis of education at 10 — 14 and many teachers' comments supported change in order to provide a clearly articulated, progressive educational experience.

1.5 The wide range of responses to the PDC's enquiries at the beginning of the Programme described the work of primary and secondary schools in curriculum liaison, assessment, information passing and the induction of primary pupils to secondary schools, often assisted by education authority advisers, working parties and college of education staff. The work of CCC committees, and University research, including studies and dissertations by teachers themselves, gave added insights into the nature of the 10 — 14 curriculum and associated issues. Supported by this background information, the PDC set itself a programme of work based on three main tasks:

(i) the production of a theoretical basis for the 10 — 14 curriculum which would take into account the well-established curriculum philosophy of the earlier primary stages and the rationale for the S3 and S4 stages based on the Munn Report [9] and the Dunning Report [10] and the subsequent Standard Grade Programme;

(ii) the evaluation of information received from regional authorities and other bodies and the identification of initiatives for further study in order to determine the conditions that appear to underlie successful curriculum liaison;

(iii) the study of existing research and other published material for the information of PDC and the commissioning of special studies which have included studies of teacher education, the historical origins of the S1/S2 curriculum, transfer arrangements in other countries and remedial education within a Scottish Region.

1.6 This has remained the basic structure of the Education 10 — 14 Programme and is the basis upon which this report is written. Since the setting up of the Programme and the beginning of its work two additional reports from SED have been taken into account, *Learning and Teaching: The Environment and the Primary School Curriculum* [11] and *Learning and Teaching in the First Two Years of the Scottish Secondary School* [12]. These documents have confirmed the need for an analysis and a programme of action that addresses itself to the reconciliation of the issues and structures that divide primary and secondary schools and it is to these issues that we now turn.

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Chapter II

MAJOR ISSUES: MAIN RESPONSES

2.1 From the preliminary thinking of the Consultative Committee on the Curriculum[1], from the initial investigations of the Programme Directing Committee, from the field studies that were undertaken by the PDC, from the advice received from individuals and groups interviewed, from published research work of well established and recent kinds, and from the insights and understandings generated by the committee as it reflected on this varied evidence, the main issues to which we had to address ourselves became apparent.

The Great Divide

2.2 The factor in the years ten to fourteen which most obviously affects the educational experience of our children is that at age 12 they move (the great majority) from the primary school to the secondary, from one kind of institution to another kind. To put it like that, however, is to oversimplify, because of the variety of groupings and relationships of schools that exists: the secondary may, in the "normal" order of things, receive its pupils from any number of primaries ranging from two to twentv two. Where a secondary fits into the range of possibilities can and does affect the experience of any individual child. And, of course, the freedom of choice offered by the "Parents' Charter"[2]can greatly extend the number of associated primaries, up to, it has been claimed, eighty schools.

2.3 Other patterns exist. There are in Scotland two middle schools catering for children aged ten to fourteen. Most of our special schools for the handicapped cater for children from five to sixteen or an even wider age range. There are schools in rural, highland and island areas which cater for the five to fourteen age range, there are primary schools which relate to more than one secondary school depending upon the part of their catchment area in which their pupils live.

2.4 What has slightly surprised us is how little difference most of these variants appear to make to the experience of individual children. Moving from Primary 7 to Secondary 1, even if the move is physically only along a corridor or up a flight of steps, can be much the same stimulating, unsettling, exciting, worrying, hopeful or threatening experience as that which involves walking a new route through unknown urban territory, or a bus journey from village to town or even settling into a hostel or digs away from home.

2.5 That this should be so indicates how significant the divide is. It is not merely a product of physical and logistical necessity. What the nature of the divide is it will be our business to explore, to identify its helpful features as well as those which are damaging.

Curriculum Organisation

2.6 We take it as axiomatic that a young person's experience of education should be coherent, continuous and progressive. If the educational experience does not have these qualities, then we should expect there to be sound educational reasons for their absence. Variety, change, discontinuity are spices of educational, as of other aspects of life, but not if these exist merely for institutional convenience, or as accidental outcomes of other considerations.

2.7 The move from one school to another school is inevitably a discontinuity. And this is not necessarily a bad thing. The newness, the "differentness", can be a stimulus. This is most obviously true in practical areas. "Real" laboratories that smell of science; shining machinery and equipment in technical and home economics rooms; the echoing gymnasium and games hall; an expanse of playing fields - all this is exciting and intellectually stimulating for children. It is less obvious but true too for "academic" areas of the curriculum. Every feature of the secondary school can represent for children new possibilities, new horizons, new experience. They arrive with hope, as well as apprehension. It is easy for teachers to forget this, to become blasé, to fail to sustain and capitalise on the enthusiasm that change can generate.

2.8 It remains true, however, that a discontinuity which ought to be a stimulus can become an inhibiting factor which slows down progress and creates, or exacerbates, lack of coherence.

2.9 One reason for this is apparent, though nothing like as simple as is often thought. It resides in how curriculum is arranged, and how teachers are deployed. The broad categories of the primary school curriculum under the charge of, in the main, one class teacher become the many subjects of the secondary school each presented by a separate teacher. This is a sudden alteration in educational provision, which, however it is explained, certainly cannot be justified by any change in the psychology of children and in their educational needs over the six weeks of summer vacation.

Assumptions about Learning and Teaching

2.10 In the foregoing statement we simplify. There are few primary classes where in the course of a school week or term the children encounter only one teacher, fewer still where they encounter only one adult. We are aware, too, that a large number of secondary schools have made adjustments in timetabling and curriculum arrangements to reduce the number of subjects children must cope with in the course of any one term.

2.11 But the contrast between the one teacher of P7 and the eleven or more of S1 remains of great symbolic significance. It is emblematic of the philosophic differences that have, over the years since 1965, grown up between the sectors.

2.12 In an enormously influential statement the authors of *Primary Education in Scotland*[3] declared the primary school to be "a stage of education in its own right". Freed from the requirement to subserve the secondary school, primaries have developed curricula based essentially in the psychology of the individual learner as analysed and described by a range of thinkers among the most influential of whom has been Jean Piaget. A key idea in this way of understanding how children learn is that they all, naturally and normally, seek to make sense of their experience of themselves, other people and the world in which they find themselves. So the ideal primary curriculum will offer children a widening range of experience, of encounters with people and the environment and support in making larger and larger patterns of meaning for themselves out of these encounters. Hence some of the characteristic features of the best of our primary schools: the central place in the curriculum taken by environmental studies or other forms of integrated work, involving active learning, problem solving, investigation and enquiry, recording and communication (including, importantly, artistic expression through a wide range of media), the whole based on the children's own developing understanding of the world. What has been learnt through these processes has been increasingly thought of in terms of transferable skills and general concepts rather than as aspects of academic or practical subjects and disciplines. For such a learner-centred approach with its requirements for carefully planned yet flexible organisation, for the readiness to teach special skills as the need arises, what could be more appropriate than the one teacher with her or his overview of all the learning experiences of the pupils - provided always that that teacher has the range of skills, resources and support to cope with such a demanding task?

2.13 This is not to claim that every primary school has achieved such a state. And arguably this kind of educational provision is more securely established in the early stages of primary schools rather than in P6 and P7. But there can be no doubt that a learner-centred approach has inspired most of the curriculum development moves which have influenced primary schooling.

2.14 Changes in early secondary education have been made from a different base of principle. For one thing, in the documents which influenced curricular thinking, there has been no serious challenge to the idea that the early secondary curriculum would consist of an aggregation of separate subjects. The Scottish Education Department's Circular 614 in 1966 advised that pupils should "...explore a variety of subjects" in "a period of orientation". Curriculum Paper 2 (the Ruthven Report) in 1967 discussed the first two secondary years in terms of subjects (though with about four hours per week "unallocated time" for other types of activity). The Inspectorate's paper in 1972 *The First Two Years of Secondary Education* in confirming the common course continued the discussion in terms of subjects, noting that integrated science had taken root widely if not universally.

2.15 This has meant that, in spite of all the social and cultural changes that have taken place, including radical changes in secondary school organisation itself, the names for categories of the curriculum have changed hardly at all from the early twentieth century.

2.16 What it does not mean is that there has been no change in the teaching, the learning and the content. "English" and "mathematics" are different in 1986 from what they were in 1926. Change has characteristically been *within* subjects based on a theoretical stance different from that operating characteristically in primary school development. Since the late sixties and with gaining momentum through the seventies a wide range of subjects have experienced development and innovation. Programmes of work based in the main on conceptual analysis of the subject matter, have been constructed. It is such an analysis which underpins the carefully devised learning sequences sometimes incorporating extension studies for faster learners and "remedial" work for slower learners. This emphasis on the subject matter as distinct from the emphasis given in primary development to the learner and how s/he learns explains the frequently made statement that primary education is "child-centred" and secondary is "subject-centred". The truth of the matter, as it is experienced by children, is much more complicated than that: but the statement does significantly reflect a main difference in the theories that have underpinned primary and secondary innovation.

2.17 That difference has widened the gap between the sectors, has made meaningful communications between primary and secondary teachers difficult to achieve, and has consequently made continuity and progression harder for pupils to experience.

2.18 And it is not simply that the basis of development has been different as between the sectors. It has varied from subject to subject in the secondary sector. Developments in English, for example, have been distinctly different from those in social subjects and science. More recently in technical education an emphasis has been given to problem solving, encouraging children to use the skills and ideas they already possess, and encouraging teachers to introduce new skills and concepts as and when the learners see the need for them. This approach is justified primarily on grounds of being true to the nature of the subject itself: problem solving is the very heart of technology. But in its emphasis upon what the learner already knows and can do, and upon the teacher's readiness to respond to the learner's needs as they become evident, the approach has much in common with characteristic primary child-centred approaches. Music, drama and physical education have moved in ways that seek to exploit the creativity of learners. Modern languages teaching has become very sensitive to the need to motivate pupils and exploit their communicative needs in realistic situations. The range of illustration could be extended. These developments, however, have taken place quite independently of each other. They are taking place at different rates. They are espoused by subject teachers with different degrees of enthusiasm and skill. Most significantly, however, there appears to be built into them different assumptions about how pupils learn. These assumptions are rarely made explicit with the result that teachers of different subjects often find it difficult to share and implement a common curricular philosophy. Hence the difficulties of establishing cross-curricular or whole school policies, as for example a "language policy for the whole school". The ambition to do so often founders because language, and its use in learning, is only an aspect of learning itself. If there is no shared learning policy, there can be no shared workable language policy.

2.19 The effect on pupils is that as they move from teacher to teacher they are (a) subjected to very different kinds of expectation and demands, and (b) judged by puzzlingly different criteria. Children, of course, are resilient. Many cope. Others however suffer from this lack of coherence in the provision for them and the expectations made of them.

Overcrowding and New Demands

2.20 We have referred so far only to traditional and well established subjects in the early secondary curriculum: English, mathematics, a modern language, science, technical education/home economics, art, physical education, history, geography, music, and religious education. All these are to be found in timetabled allocations. In many schools the range is widened to include social education and/or guidance periods and such subjects as drama, modern studies, classical studies, Celtic studies, economics. The disadvantages of such a range of discrete subjects are well known and understood, the principal one being that teachers of those subjects given the lesser allocations of time (virtually all other than English, mathematics, science and modern languages) can hardly get to know their pupils and are consequently disadvantaged in their teaching of them. Many schools have responded, as we have noted, by timetabling devices to ameliorate the situation. But this does not mean that the problem is solved, because further pressures exist.

2.21 There are quite legitimate new demands on curricular time. Should we not in the 10 — 14 curriculum — in primary and secondary — be finding space for introducing children to computers and the new information technology, to money management and the basics of economic literacy, to the study and understanding of the mass media, particularly television, to the fundamentals of political organisation and the ways in which a democratic, industrially-based society runs? And how do we fit in health education and international and multicultural education?

Standards of Achievement

2.22 We have found no evidence to support the view often expressed in the media that standards of achievement, especially in "basics", have declined. But we do know that H M Inspectors have found that standards are not as uniformly high as they might be. In primary education the amount of time and energy that teachers and children spend on textbook exercises in English and arithmetic is not only, in many schools, excessive, it is counter-productive. What inspections have emphasised is not the lack of "basic" skills, but rather that these skills are not deployed in a sufficiently wide variety of contexts, for a sufficiently wide range of purposes and are not linked with the growth of conceptual understanding in children. What they have shown are the very great differences between the best of the primary schools in this regard, and the least satisfactory.

2.23 Concern about achievement in early secondary is of a different kind, and inadequacies here are the product of an opposite cause. While the eleven or twelve subject structure certainly provides range, while it may provide balance (but there are arguments about that), it by no means guarantees depth of learning. The dividing of the educational experience into so many separate elements, with small overall time allocations and often still in short periods, would almost seem to lead inevitably to superficiality of coverage and a teaching style that promotes rote learning. That standards are as high as they are is a tribute to the resilience of children as learners and the resourcefulness, skill and dedication of individual teachers in rising above the difficulties of the system they find themselves in.

Attitudes to School and to Learning

2.24 No single document on Scottish Education has been more disturbing than *Tell Them From Me*[4]. It reveals with sharp and painful clarity the degree to which significant numbers of young people have felt themselves neglected and rejected by schools on the grounds that they do not belong to the group of pupils valued by schools. Such pupils have been "taught" to undervalue themselves. Not all, of course, accept such an undervaluation and, as the Pack Report[5] indicated, these pupils react against the system by rejecting it and its values. This is a cause (not by any means the only one, but a significant one) of both learning failure and of indiscipline.

2.25 Doubtless the roots of these attitudes and the behaviours they produce go deep into the school system and indeed into society itself. But there is good reason to believe that the 10 to 14 period is a particularly significant time for the creation and setting of these attitudes. It is in this period that children, as they move from a dependency relationship with adults towards the autonomy of adulthood, begin the formation consciously of their own value systems. It is imperative that the attitudes they form to schooling and what it represents should be positive ones. That in turn means that schools and individual teachers should become more consciously aware and active in nurturing positive attitudes among pupils.

A Strategy for Change

2.26 This brief, generalised survey will remind readers professionally engaged in education of things they already know. Other readers — the public at large, parents, political decision-makers — may see things from a new perspective. That latter group, especially, should recognise how many of our current difficulties are the products of success: the excellence of many primary schools has derived from the freedom to develop, given to them by the Primary Memorandum[6], but this has widened the gap between primary and secondary; certain subject courses in early secondary, which have won international admiration and emulation, have been achieved by concentration on the subject, but without a consideration of the coherent synthesis of knowledge and skills across the curriculum.

2.27 All readers must recognise the complexity of the issues and their multi-faceted nature. There are contradictory demands: we need to widen the curriculum but we must not make it even more fragmented or risk substituting superficiality for depth; we need to harmonise the theories underlying development without risking the successes that have been achieved; we need better assessment, recording and communication to smooth the path of children from one school to another, but teachers must not be burdened with unnecessary paperwork; we need to encourage cross-sector and cross- curricular thinking without risking the benefits that separate training and specialised qualifications have brought. To meet such seemingly contradictory requirements can clearly be no easy or short term task. It must involve every teacher in top primary and early secondary in re-thinking her or his role in relation to the total education of children over the years ten to fourteen. But teachers live and work in social and institutional environments which can inhibit or encourage change. So every school and, in the secondaries, every department must be involved in support of individual teachers. Support for that to take place must come from education authorities and their officers, who in turn need to know they have the support of national policy-makers and their agents.

2.28 This report focuses on the education of children between the ages of ten and fourteen. But it is an invitation to every element in the educational system to join in an enterprise whose outcomes will be the better education of children at a highly important stage in their lives when attitudes to themselves as learners and social beings are formed. This report offers a strategy to that end, and its structure is based upon that strategy.

- We offer a set of goals or desirable outcomes of education over the 10 — 14 age range. We express these outcomes in terms of behavioural and attitudinal characteristics of young people which the educational experience should be designed to foster.

- We propose the need to work together between the sectors and across the curriculum in the light of the main guiding principles, and identify some difficulties in the process of collaboration.

- We make explicit some factors in schooling which help to create a supportive climate for learning.

- We identify a set of aspects of experience which children should encounter throughout the 10 — 14 period and which provide the basis for a broad and balanced curriculum.

- We summarise what we see as the essential conditions for an effective ten to fourteen curriculum.

- We suggest for both primary and secondary various ways in which the curriculum may be structured so that the principles and conditions we have set out may be satisfied.

- We examine the implications of these goals and criteria for teaching and learning, including assessment, record keeping and information passing.

- We offer guidance on caring for pupils in the social setting of the schools.

- In all the foregoing it is recognised that a national prescription cannot be made for the precise content of every pupil's educational experience, and that there is more than one arrangement of curriculum which can effectively provide for education at 10 — 14. It is recognised that each school and every group of schools has its own problems and own opportunities. It is recognised that the further from any particular classroom that decisions are made about the nature of the lessons that children experience, by that much is the teacher deprived of the chance to act as a caring and accountable professional. We therefore make our recommendations for the setting up at school level and among groups of associated schools a procedure for the collaborative management of curriculum over the years ten to fourteen. These structures should be established with the utmost expedition in order to plan and execute a programme of innovation and reform in line with the curricular proposals we make, in accordance with their own circumstances and accounting to their own education authorities.

- We examine implications for education authorities and other agencies within the educational system. Among these implications we point up the need for adequate resourcing of our proposals, and recognise particularly the need for teachers to be given time both to develop their professional skills and to undertake the tasks which our proposals call for.

SUMMARY

It is central to our Report that every young person's education from 10 to 14 should be coherent, continuous, and progressive, although each experiences more than one school and different teachers during these years. Every teacher must review his or her role, in relation to that total education which every learner experiences. To do that effectively, teachers need — and deserve — the support of their schools and departments, of Regional authorities, and of national policy makers.

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2. *Education (Scotland) Act 1981*. HMSO.
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CHAPTER III

DIRECTIONS AND DESIRABLE OUTCOMES

Curriculum in the Middle Years

3.1 While there may be considerable difficulties in planning and implementing educational provision from ten to fourteen, we do know where we have been and where we are going. Whatever else schooling at this stage in Scotland may seek to do, it must build on the earlier learning experiences in pre-school and primary and prepare our pupils for the curriculum at 14 — 16 as it has emerged over the long debate and development period since the publication of the Munn and Dunning reports[1].

3.2 We have referred in Chapter II to the characteristics of primary education as they have developed over the years in response to the SED Primary Memorandum of 1965[2]. Subsequent national reviews of the primary curriculum have confirmed a curricular organisation which has sought to emphasise the inter-relationship of children's experiences through broad curricular groupings such as language arts and environmental studies. Primary schools have also been encouraged to maintain breadth in the curriculum by ensuring that curricular provision includes opportunities for experiences in the expressive arts and, more recently, in science.

3.3 The intentions underlying the primary curriculum, however, go beyond the labels used to describe the structure and in considering the 10 — 14 curriculum it will be necessary to take into account the intentions proposed by the Committee on Primary Education in its Position Paper[3] of 1983:

(1) To develop in children:

- (a) progressive mastery of a broad range of knowledge and skill for interpreting the physical and social environments and for acting in thoughtful and communicable ways in these environments;
- (b) knowledge, attitudes and dispositions which enable them to make sensible choices and to assume responsibilities for their personal actions and their actions towards others;
- (c) ability to act adaptively and confidently towards new intellectual and practical challenges.

(2) Through a curricular structure which:

- (a) represents adequately the various ways of knowing and feeling the social and physical environments;

(b) is clearly committed to the equal validity of different forms of curricular knowledge and expression;

(c) recognises fully the interdependence of information, concepts and skills;

(d) provides a developing set of challenges and experiences;

(e) demonstrates continuities from teacher to teacher through the school in basic policies and procedures for acquiring or experiencing knowledge, skills and attitudes;

(3) With opportunities for children to:

(a) play a real part in organising their activities;

(b) express their knowledge and skill in practical and imaginative ways;

(c) act both individualistically and co-operatively;

(d) develop an informed critical stance towards information and opinion;

(e) value equally the different modes of communicating knowledge, experience and imagination.

3.5 The structural features of the 14 — 16 provisions most helpful for those designing a 10 — 14 curriculum are as follows. There is a core of courses in Literary and Linguistic Studies (the required component of which is English; other languages being optional), mathematics and science, in physical education and in religious and moral education together with a wide-ranging set of option courses from which a selection is made so as to ensure breadth and balance in the remaining "modes of activity", social studies and creative and aesthetic subjects. These courses are organised (in the three levels of syllabus and the award structure) to develop knowledge, skill and understanding from the basis of a wide range of attainments and starting points. A particularly helpful feature of the structure is the extension of the range of curriculum areas given, as it were, the seal of social approval by inclusion in the examination award structure: new courses have been introduced which express educational aims perhaps long espoused but often in practice neglected. These include social and vocational skills, creative and aesthetic studies, (which brings drama and physical education into the examination structure for the first time), health studies (also involving physical education) and contemporary social studies.

3.6 The development of such courses, which draw upon a range of subject specialisms and which emphasise contemporary relevance, are encouraging examples of the educational system's readiness and ability to adapt to new needs. A similarly encouraging adaptability has been shown by new emphases within subjects, as in the extension of English teaching to encourage the teaching of speaking and listening.

3.7 The importance the 14 — 16 development has given to the idea of "activity", as in the terminology of "modes of activity", is also very helpful. It emphasises that there is more to "doing" a subject than is necessarily implied in the traditional view of learning a subject. To benefit from the "mode of activity" called "the scientific" it is necessary to *act* like a scientist to formulate problems, hypothesise solutions, test the hypotheses; it is not enough simply to learn for reproduction in an examination the answers to scientific problems, or to memorise somebody else's answers to somebody else's questions. This emphasis on the *process* of making meaning, much in evidence in the proposals for new third and fourth year courses, is another welcome guideline for the designers of ten to fourteen courses.

3.8 This emerging system is intended to subserve four sets of general aims which the Munn Committee proposed should underpin the curriculum. These in summary form are as follows.

(1) To develop in the learners knowledge and understanding of the self and of the social and physical environment.

(2) To develop the learners' skills. These skills are said to be in three categories: the cognitive (in which emphasis is given to skill in using language, handling number, using and interpreting other symbolic systems); the "interpersonal" (notably the ability to "get on " with people); the psychomotor (that wide range of skills involving physical activity ranging from games playing, through craft work, to music making and dance).

(3) To develop the moral and emotional natures of the learners (including the fostering of values such as compassion, tolerance, fairness, rationality in dispute, respect for rational authority, and responsible but questioning attitudes to social issues).

(4) To equip the learners to meet the demands of society (the worlds of work, leisure, personal and family relationships, membership of the community).

3.9 In sum, these statements ask schools to help children to acquire the competencies they need to operate effectively and ethically in society, and to help them to understand and make sense of themselves and their world.

3.10 Clearly Education 10 — 14 must contribute to the fulfilment of these aims and must prepare pupils to benefit from the 14 — 16 provision.

3.11 It should not, however, be merely a preparation. It must be satisfying in its own right, perceived by both learners and teachers as worthwhile in itself, as well as providing a secure basis for further intellectual, physical, emotional and social development. Indeed it is only an experience of learning that has been worthwhile that can provide such a basis. And, of course, to achieve that end it is necessary to be sensitive to, and in tune with, the development of children over this period.

Development and Learning

3.12 Such sensitivity is always necessary, but especially so at 10 — 14 since change is probably greater than at any time since the change from infancy to childhood. Development will take place whatever schooling does. What schooling should do is recognise and capitalise upon this development, harnessing it for ends valuable to the pupils themselves and to the society which they will enter.

3.13 In this period pupils are coming to terms with increasing muscular capacity, changing bodily proportions, reproductive development and the appearance of secondary sex characteristics. There are new manifestations and directions of interest, often of defiance and aggression. There is increasing sensitivity and a growing capacity to see other points of view, yet pupils at this stage are also becoming more conscious of themselves and may thus, paradoxically, seem more self-centred than before. Children's moral thinking is shifting from acknowledgement of rules as given by elders towards autonomy and internal judgement. These young people want a share in decisions yet they also expect adults to respect their privacy. Socially, dependence on parents and teachers is lessening and peer group affiliations are becoming more important.

3.14 The emotional and moral developments during the 10 — 14 stage are mediated by increasing powers of abstraction and abilities for symbolic manipulation, classification, and hypothetical operations. Life situations and moral issues are questioned; things previously taken for granted are being opened up to questioning by the growing mind. Old certainties are no longer secure and life can look increasingly ambiguous.

3.15 During this stage the young person attempts to achieve an acceptable self-image; pupils' views of themselves, as learners of those things which are valued by schools, are likely to become fixed for better or worse.

3.16 Similarly, a much wider value system is in formation. The learners in these years are building for themselves a cognitive map and pattern of attitudes and expectations for life. To do this learners draw upon, not just their schooling, but upon their whole social experience — home, community, peer group, the mass media (perhaps especially popular music) which shape and bring to them elements from the wider culture. This is an *active* process; the pupils are not simply acted upon. Unless schools join in the action, recognising that pupils have aims and objectives for themselves, offering them opportunities for initiatives, support in realising their own intentions, skills of language and reasoning to enable them to be reflective about their growing values, then school and its values will play little significant part in their development. Simply offering a diet of fixed rules and right answers will not do. Pupils at this stage are perceiving that real life is not nearly as tidily packaged as much of the purveying of knowledge in school would suggest. This is the time when children can begin to develop an adult tolerance of uncertainty from a growing basis of reason.

3.17 The consciousness of the self and its relationship to the environment extends to and includes a growing awareness of the learning processes themselves. This is potentially a very powerful development which the school should encourage. Evidence suggests, however, that pupils become aware of a very limited range of ways of learning, and that that limited range is used whether it is the most appropriate or not: if it "works" it is used[1].

3.18 Developments of this kind do not of course happen at a uniform rate or uniformly across the school population. And a great deal of what is childlike persists throughout the age range, so that even at fourteen, a very sophisticated young woman, carefully made-up and coiffured, apparently very poised at the school dance or disco, may still come home to play with her favourite toys. The world of imaginative play remains very real and important, and fourteen year olds still love to go exploring in fantasy in their own minds. Indeed it is arguable that it is through imagination and imaginative play, quite as much as through the exercise of developing logical powers, that the world is rendered manageable and comprehensible. Another, less welcome, feature of childishness persists and asserts itself — that is misbehaviour. Young people at this age are *developing* a sense of personal and social responsibility, but this quality is far from firmly established. They will, at times, assert themselves through various forms of misbehaviour. Particularly, in this age range they enjoy ganging up. Gang or group misbehaviour is common. This is a further means of getting self satisfaction, "kicks", excitement. Firmness, as well as understanding, is called for by schools.

3.19 Also noteworthy is the delight young people in this age range take in information about the extremes of the physical world — the smallest or tallest, the deepest or longest — and the extreme achievements of human endeavour no matter how bizarre. They may be engaged in making patterns of meaning but most of them are enthralled by the world of the *Guinness Book of Records* which is full of amazements and astonishments simply because its records go beyond and challenge the normal pattern of things and fit into no tidy predictable order. And to add a further paradox, this is the time when hobbies based on the concept of order and completeness also flourish: stamp and other collections; train spotting; scrap books; diaries.

Desirable Outcomes

3.20 It is with these considerations in mind — that young people are actively involved in their own learning through mind and imagination, that learning must be meaningful in its own right throughout the 10 — 14 period — that we choose to express the aims of education at this stage in terms of desirable outcomes. These outcomes are in the form of a list of behavioural and attitudinal characteristics of pupils. But we do not intend them solely to form a basis for the assessment of pupils. We set them out in order to show what qualities of mind, feeling, and body, the curriculum 10 — 14 should be designed to nurture. They are therefore a basis for the evaluation of the curriculum: every aspect of the provision made should promote one or more of the characteristics listed: nothing should be done that would inhibit the achievement of any one of them.

3.21 The curriculum over the years 10 to 14 should be designed to contribute to the pupils' capacity to:

(a) Ask questions about experience in and out of school, formulate problems, suggest solutions and test these suggestions.

(b) Respond intelligently and positively to situations in and out of school by bringing to bear on experience a structure of concepts and skills. These will include some of the specialised concepts and methods available in the mathematical, scientific, social, aesthetic/practical, moral and spiritual ways of understanding the world.

(c) Deploy a range of skills in school and in life outside school. These would include skills in numerical processes, communication, reasoning, information handling and interpersonal relations.

(d) Behave in a flexible, adaptive manner, using skills, not mechanically, but in ways appropriate to particular purposes and situations.

(e) Show confidence in using language as a means of communication, as a medium for handling ideas, and as a way of representing experience to the self.

(f) Show ability to make creative use of a variety of media to express feeling and ideas and create objects for utility and for aesthetic satisfaction.

(g) Display confidence in powers of learning and a positive attitude to ideas and skills as interesting in themselves and of relevance in everyday life, work and leisure.

(h) Display initiative and a growing capacity for independent learning, the ability to learn from a variety of media and experiences, and the ability to select for use from a variety of learning strategies.

(i) Participate positively in work with peers and function effectively in co-operative learning situations.

(j) Display interest and skill in bodily exercise and games and have appropriate knowledge and attitudes in matters relating to health, hygiene, and the environment.

(k) Enjoy learning, and show satisfaction in the pursuit of some personal interests and competences.

(l) Show tolerance of ambiguity and uncertainty; and to alternative points of view.

(m) Offer reasons in support of a position.

(n) Display some width of knowledge of a variety of cultures and values in a changing society, and some sensitivity to the predicaments and dilemmas of human life. Begin to analyse why individuals and groups behave in particular ways, and why their attitudes to appropriate behaviour may differ.

(o) Make informed choices in relation to future studies in terms of some awareness of what these studies involve and having regard to realistic self-appraisal of individual interests, achievements and aptitudes.

3.22 An educational experience designed to nurture these characteristics will (1) sustain the pupils' active involvement in their own learning processes and their continuing enjoyment of learning; (2) by its primary focus on the learners' world, their physical, social and moral environment, make possible a coherent learning experience; (3) by its emphasis on an enlarging range of skills and understanding enable progression to take place; and (4) provide a range of capabilities in which skills, knowledge and understanding are combined, which build on the curriculum up to age 10 and which can be further developed through the curriculum at 14 — 16.

3.23 This statement of desirable outcomes quite clearly emphasises the affective domain — the attitudes and dispositions of pupils. Further, it implies that the processes and experiences of learning are as important as the content of learning. This choice of emphasis is quite deliberate. We are persuaded that the period between ten and fourteen is the time when young people are won to or lost from schooling; that this is the time when they recognise its point and purpose, or when they reject it. Cognitive development, psycho-motor development are as important at 10 — 14 as at any other stage of education, but there is at this time a very special importance in fostering positive attitudes to the learning process itself. This emphasis must, we believe, be one of the dominant shaping principles of Education 10 — 14.

SUMMARY

At 10 — 14, our schools must build upon learners' previous experiences and prepare them for their 14 to 16 curriculum. They should, however, do more, for both learners and teachers must regard their 10 — 14 education as worthwhile in itself and in keeping with children's development, which schools should harness to aims valuable for both learners and their society. The desirable outcomes emphasise that learning has to be an active process and it can be enhanced by the power of children's imagination. Every experience planned and guided by schools should promote those desirable outcomes.

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4. "In many cases the strategies (the pupils) used were redundant, inefficient, and unsophisticated, and yet they served well to answer the sorts of questions or problems set, all of which were typical school tasks".

   Nisbet J and Shucksmith J (1986) *Learning Strategies*. Routledge. Chapter 7, page 81.

CHAPTER IV

TOWARDS CURRICULUM DESIGN 1. WORKING TOGETHER

4.1 So far we have pointed up some major issues and suggested a set of directions and outcomes. What we have said refers to all children, to boys and girls equally, and to the whole ten to fourteen age span. We have spoken of the need to make a provision which is meaningful in its own right, in which children experience success and enjoyment, which is wide-ranging and balanced, which is continuous, progressive and coherent.

4.2 How do we achieve these qualities? By planning and of course by implementing the plans. In view of the closeness that we have already identified between the processes and the products of learning and teaching, we assert that, to achieve plans that can be effectively implemented, planning must be the responsibility of teachers themselves. The very first requirement for achieving continuity, progression and coherence is that teachers should meet and explain to each other what each seeks to contribute to the education of the children in their care. Within a group of primary schools and the secondary with which they are associated, this basic requirement applies equally to the teachers in any one primary school, between the teachers in the several primary schools, between the primary teachers and the secondary teachers, and among the teachers in the secondary school. Explanation and sharing is only the preliminary step which should lead to planning, implementation, and monitoring of the curriculum.

4.3 We advocate a gradualist approach to curriculum development, starting from wherever a group of schools finds itself in relation to the principles and practices we shall recommend. Necessarily we advocate a staged approach rather than an attempt to review the entire curriculum which in purely practical terms could not be coped with. Evidence suggests that the very most that can be tackled by teachers within a single group of schools is three curricular areas at any one time. Even that puts considerable strain on primary schools. (It is of course important that particular development tasks be carried out in relation to the whole curriculum in order to avoid the danger of losing coherence in pupils' total learning experience). Another consideration which affects choice of area is the personalities involved. Collaboration can be difficult to achieve when personalities clash. But this is a difficulty that has to be got round in the interests of the children who are being educated.

4.4 Effective work towards continuity and progression of educational experience within a chosen area of the curriculum comes about when a planning group or working party is directing its energies to a specific product — an agreed syllabus, some assessment materials, a teaching programme — and we recommend that such groups should undertake tasks geared to producing an outcome. Not that it is ever possible to be satisfied with a given outcome. Curriculum has to be kept under continuous evaluative review. But we are clear that the effort to produce an outcome is an essential focus and stimulus.

4.5 It is the role of management (both at school and education authority level) to facilitate such planning meetings, to set the agenda, to monitor and evaluate their effectiveness. Later in this report we offer proposals for the organisational aspects of such an enterprise. A great deal of our report is an exploration of what should be on an agenda for such discussion and in what terms it should be considered.

From Liaison to Collaborative Planning

4.6 What we are here proposing should not be mistaken for a simple re-affirmation of the need for primary-secondary liaison. What we recommend goes beyond what is generally understood by that term.

4.7 The present situation as we have found it in Scotland is that "primary-secondary liaison" is regarded, almost universally, as a good thing. All authorities are committed to it in principle, all encourage it to happen, some make it a requirement in the sense of ensuring that regular meetings take place between the heads of the secondary school and its associated primaries. The focus of "liaison" as usually conceived is very much upon facilitating transition from one institution to another. Transition, it is widely recognised, creates two related but distinguishable requirements for action: one having to do with administration and organisation (how many pupils, how many teaching sections, how these will be formed, who will teach them, what information will be needed by whom etc.) and the other having to do with the social and pastoral care of pupils (helping children to understand the new system they are moving into, allaying their fears and anxieties, being alert to the special needs of individual children, and so on).

4.8 In the course of our field work, in correspondence with education authorities and schools, in meetings with administrators and teachers, we have found no profound dissatisfaction with arrangements for these purposes. Obviously in particular instances the need for improvement of arrangements was recognised and was often, we found, the subject of attention and experiment. But by and large these two areas were felt to be adequately dealt with.

4.9 A third area of liaison, however, was felt to be underdeveloped and neglected. (Sometimes, indeed, it was so neglected as not to be recognised as an issue). And that is the area of curricular continuity and progression.

4.10 This is not to say that serious and important attempts to achieve it have not taken place. On the contrary we have encountered enough examples to be confident that it can be achieved. But these examples are not only few, they are frequently dependent on initiatives taken by individuals or individual institutions. Rarely are they given the support and funding they need to survive, and often cease to exist when a committed individual changes post.

4.11 There is an irony here. Schools exist primarily to serve children as learners. Administrative arrangements exist to subserve that purpose. So also do the arrangements for looking after children as social beings. Why should liaison arrangements for curriculum, the central concern of schools, be relatively neglected?

4.12 We are aware of three reasons. The first we have already mentioned: curriculum has developed separately as between the sectors. The second is that while responsibility for administrative and pastoral matters can be clearly focussed on individuals from senior management and guidance staff in the secondary school, curriculum responsibility is dispersed among a range of principal teachers. The third is that time is rarely formally allocated for *curriculum* liaison either in primary or secondary. When in the secondary school, the overall responsibility for liaison is given to a year or stage head, it is one among many responsibilities, including a teaching commitment. In primary schools, assistant head teachers, who could support head teachers in the matter of curriculum liaison, are frequently involved in virtually full-time class teaching. The Committee on Primary Education has recently identified this practice as "a waste of potential, and one which can cause serious management problems in schools"[1]. We endorse that view. We further endorse the amelioration proposed by COPE, that a management structure should be provided "sufficient to encourage the kinds of curricular and professional thinking required ..."[2]. COPE has recommended[3] that staffing should be reviewed in the primary sector in order to make senior personnel available. The same need exists in the secondary sector. The number of Assistant Head Teachers who may be appointed is related, in both sectors, to the number of pupils in the school. We strongly recommend that the basis for this provision be reviewed and that the number of Assistant Head Teachers should be related to the range and nature of duties to be undertaken. The need for staff at this level is not simply a function of school size. Curriculum liaison between primary schools and their associated secondary is an important and heavy reponsibility. We shall argue further that the co-ordination of curriculum in the first two secondary years requires leadership by a member of the senior management team. Only a more generous provision of staff as Assistant Head Teachers, who are not unduly burdened by class teaching, will make it possible, in most circumstances, for these onerous tasks to be undertaken to a thoroughly satisfactory extent.

Collaborative Planning and the Language of Educational Discussion

4.13 Given time and resources, the staffs of schools — special, primary and secondary with their varied subject backgrounds — can come together and rationally review their joint provision. The agenda for such discussions, is, we have said, the subject of this report.

4.14 That agenda has to be comprehensive. It has to be the curriculum, generously defined as *all aspects of the educational experience which pupils have in schools and those out-of-school experiences which school influences*. But anything as all embracing as that needs analysis to make it manageable. The terminology for such an analysis, and therefore for sharing ideas, for explaining, for mutual enlightenment, is extraordinarily slippery and multi-valent. A minority of secondary teachers who are experienced in the management of innovation at 14 — 18 have become accustomed to thinking in terms of "modes", "courses" and "modules". Most secondary teachers continue to think in terms of "subjects". The technical language of subjects contains terms like "core", "extension", "remediation", not widely used by primary teachers. Primary teachers use a vocabulary of areas of the curriculum, including "language arts", "expressive arts", "environmental studies". Sometimes these areas are thought to be either the equivalent of "subjects" or aggregations of subjects (as environmental studies is "really" history and geography, and perhaps science and even health education). But sometimes these "areas" of the curriculum are thought of as having their own independent conceptual existence, broader far than any list of academic subjects could comprise, and deriving both from an analysis of knowledge, and from a theory of learning and how children perceive the world. Secondary teachers looking "down" to the primary school tend to favour the aggregation-of-subjects view; primary teachers, disconcertingly, can slide from one view to another depending on circumstances.

4.15 This is fertile soil for producing much mutual incomprehension, especially when primary and secondary teachers come together. We hope that from this report there may be drawn a vocabulary for talking about curriculum that bridges the gaps. But we do not deal merely in words. The words do represent different assumptions and beliefs about learning, and about the nature of knowledge and of knowing. Teachers at planning meetings will have to engage in much patient and detailed explication and demonstration in order to fill any vocabulary with mutually comprehensible meanings. Such meaning-making is much enhanced when teachers visit each other's classrooms.

Middle Schools in a Three Tier System?

4.16 One suggested solution to the problems of curricular continuity and progression is to set up a system of schools providing education exclusively for the 10 — 14 age range.

4.17 We have given this possibility a great deal of thought and study, although the broad spectrum of opinions and evidence we received from interested persons and bodies included little enthusiasm for a three tier system of primary, middle and upper schools. We analysed the Department of Education and Science survey of middle schools (9 — 13 years)[4] and had formal discussions with its authors. Members of the PDC also visited Scottish schools where pupils did not transfer at 12, and we commissioned from Dr James Kidd a major survey of transfer arrangements in other European systems.[5]

4.18 Arguments for and against a three tier system, including middle schools, tend to come under four heads: curricular/educational; social/psychological; administrative/organisational; and costs. For example, it is pointed out that specialist teachers on the middle school staff can work also with 10 — 12 year olds; the onset of adolescence can be eased if there is no transfer at 12 to a different school; timetabling is not dominated by the needs of 14 — 18 year olds; and existing buildings can be used more effectively to suit the numbers in a particular age group.

There are, therefore, positive claims which can be made for a three tier system, and we have found no evidence that middle schools cannot provide a satisfactory education for their children. Many, indeed, make very good provision.

4.19 However, we did not find convincing evidence that middle schools, within a three tier system, are the *sole* arrangement likely to offer a good education to 10 to 14 year olds. We are confident that the best features of middle schools can be created across primary and secondary sectors, through the collaborative system of co-ordination and management we propose for a partnership of associated schools. In addition, although our proposals have cost implications, both the change to a national three tier system and its running costs would be much more expensive, especially when pupil rolls are declining. Even more significantly, the strongest factor weighing against a three tier system is that it creates two transition points and two discontinuities for learners. As a result, middle schools' staff must be very well informed about, and involved with, the range of primary schools from which they draw pupils, the upper school to which pupils transfer, and the other middle schools associated with that upper school. The challenges of liaison and co-ordination that all schools face are here increased and complicated. In the one Scottish area where a range of primary schools (for 5 — 10 years) sends pupils to two middle schools (10 — 14 years) and they transfer at 14 to one upper school, liaison arrangements work well. This, we believe, has taken place because the teachers devoted considerable time, energy, and thought to co-ordination among the three types of school. A similar degree of attention to the less complex situation of one transfer at 12 between primary and secondary school, would prove extremely valuable for staff and pupils throughout Scotland.

4.20 The balance of argument, then, led us away from proposing a standard pattern of middle schools, catering exclusively for 10 — 14 year olds.

A 10 — 14 Teacher?

4.21 To remove middle schools from the argument is not to remove a keen awareness of the need for "middle-school insights" in teachers. Our belief in the need for smooth transitions and continuity over 10 — 14 made such insights a pressing requirement. Here, however, we came up against the existing Regulations for Teaching Qualifications and patterns of training, which differentiate sharply between primary and secondary qualifications, and until very recently length and type of course. The three year Primary Diploma has now been replaced by the 4-year BEd as the basic entrance to primary school teaching, but the first new graduates will not be in the schools until the late 1980's. For secondary, the basic pattern of university degree or specialist qualification followed by a one-year post-graduate teacher training will continue to be the norm. By decision of the Secretary of State, BEd degree courses leading to secondary teaching qualifications will no longer be offered. The norm for primary will therefore be one of concurrent subject content and professional training with a significant minority entry through a post-graduate consecutive pattern; whereas secondary training will continue to follow a wholly consecutive pattern.

4.22 In spite of the difficulties we were tempted to explore the arguments for a new teaching qualification designed to meet directly the needs of the 10 — 14 age range. We ultimately rejected such a teaching qualification on the following grounds:

(i) It would place holders at a disadvantage in both primary and secondary in that they would be qualified over only part of the range of the school.

(ii) By extension this lack of broad-ranging awareness would almost certainly affect promotion opportunities for holders in both types of schools.

(iii) There is no history in Scotland of partial qualification for primary school at initial training stage. The philosophy of continuity from 3 — 12 would be seriously undermined if there were. No argument to pursue the English model of infant, junior and senior school initial qualifications has ever been sustained in Scotland. Special post-experience qualifications have always been the basis of Scottish solutions; and we support this still.

(iv) An outmoded system of qualification to teach in only part of the secondary school was abandoned in Scotland by the end of the 1960's, and we do not wish to turn the clock back.

4.23 We return to the matter of teacher education and teacher qualification in Chapter XIII, where we make it clear that our solutions to our problems will have to be found within the existing training regulations and patterns of schools.

SUMMARY

Our recommendations apply to all learners of 10 to 14. To achieve continuity, progression and coherence in their education, planning must be the reponsibility of their teachers, who meet and explain to each other what they plan for children's learning. Curriculum development should follow a gradualist approach, with each group of associated schools beginning its review from its present situation, and it is essential that school and education authority management help teachers to form working groups, set the agenda, and evaluate their effectiveness. We also believe that working groups should aim at a specific product. This approach to curriculum development has implications for school staffing. Assistant head teachers in primary and secondary schools should have a major responsibility for curriculum liaison between associated schools — they cannot also have full-time class commitments. On the other hand, having weighed the issues with care, we do not support a new system of middle schools exclusively for 10 — 14 year olds, nor a new pre-service teaching qualification concerned only with 10 — 14 education.

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CHAPTER V

TOWARDS CURRICULUM DESIGN 2. SOCIETY, THE SCHOOL AND THE CLIMATE FOR LEARNING

5.1 We have said that in curricular planning, the greatest effect is achieved when teachers work to specific ends and products. But any particular act of learning and teaching exists within a context greater than any unit of work, or module or programme or syllabus. It exists within a structure of relationships, sets of expectations, assumptions about values, patterns of behaviour — including ways of speaking and communicating — which together make up the climate for learning. This setting for learning is arguably every bit as important in influencing children as all the *formal* acts of teaching and learning that take place in school.

5.2 The most significant influence in creating this setting — the climate for learning — is society itself and especially the community which the school serves. Schools are creatures of society, their operations made possible, supported (and constrained) by social mechanisms of varying degrees of formality, ranging from the structure of the Education Authorities to contacts with individual parents about specific matters.

5.3 What we here wish to highlight within this relationship is a fact so obvious that its full consequences are easily overlooked. It is that social influences impinge upon schools most powerfully in and through pupils themselves. Pupils are what they are because of what they have already learned socially, in their family, among their peers, from their early schooling. From that whole social experience, of which school is a relatively small part, their understandings, knowledge, attitudes, dispositions, values have been formed.

5.4 There is too little acknowledgement in practice that by age 10 children have developed extensive patterns of understanding — that they do possess a range of concepts which enable them to make sense of their world. These concepts will, of course, be very limited, likely to be muddled and mutually inconsistent, but they are there. And it is from where children are that they have to be taught. Too often they are taught as if they had no knowledge, no understanding, no explanations to offer. It is a remarkable fact that the well-meaning 'fresh start' view of first-year secondary schooling not only can ignore what children have learned — or mislearned — informally, but even what has been formally taught and learned — or mislearned — in primary schools.

5.5 If informal, cognitive development is inadequately acknowledged, the other dimensions we have mentioned — attitudes, dispositions, values — may be recognised in an unhelpful way. "Pupils in this area don't want to learn, they are not interested in education" is an extreme example of this reaction. What this means is that there is a gap between what the school wants to teach and what the pupils want to learn: the sub-cultures are not in harmony. We take the view that no child — except arguably a few pathological cases — does not want to learn. We do acknowledge that many children appear not to want to learn much of what school offers. But if school is being rejected, it is because school is offering the wrong things, or, much more likely, the right things at the wrong time or in the wrong way. To render what school has to offer welcome to pupils, it is necessary to take account of what pupils believe and value, and make connections with that.

5.6 This is, of course, a familiar plea for the psychological and social relevance of curriculum. But it is much more than that.

5.7 Curriculum exists on a spectrum, we shall argue, from useful practical skills through to the effort to enable the learners to make sense of their experience, and their world. At that end of the spectrum where understanding lies, schools tell pupils 'stories' about what kind of creatures they are, about how they came to be what they are, what sort of world they live in and how it is believed they ought to live in it.

5.8 The same children, however, have grown up and are living in a society where they have heard and are hearing just such stories from their parents and relatives, from friends and neighbours, from the songs they sing and listen to, from radio, press and T.V. The stories that the school tells have to take up, link into, extend and refine and sometimes challenge and change them. In this sense, even science is a story, one that ultimately transforms commonsense accounts of the world into explanatory theories of enormous — and exciting — power. But if the school's stories seem to have no connection with what pupils have learned to believe from the wider world, pupils will ignore them.

5.9 The linking with the developing of the learner's already existing patterns of understanding is the essential starting point. But giving the learners power to make these transformations in how they understand themselves and their world, and consequently to function more effectively in it, is the purpose of schools. Learners bring, as it were, a world view with them into school. They should, as they leave the school gates, have enhanced capacities for dealing with the world deriving from an enlarged understanding of it.

5.10 And it is here that our metaphor of 'telling stories' to children begins to run out of its usefulness. The learners, as we have stressed, do not passively receive the messages of the school or of the wider world. They actively process them and construct their own 'stories'. What the school must do, then, is to develop this capacity to construct, and reflect upon their own understandings. To do this learners need a range of powers, and these powers need to be developed by appropriate activities throughout the curriculum. These activities and the powers they develop should permeate the curriculum and become part of the climate in which learning takes place.

5.11 We have identified these "permeators" as follows: working co- operatively with others to some purpose (co-operative learning); working independently (independent learning); investigating topics and issues to propose solutions to problems (problem solving);

rational/critical thinking (reasoning); finding out information from people, books, databases and other information resources (developing access skills); using language actively as a tool for processing information and developing understanding (language development); trying varying strategies for learning (learning to learn); interacting with others to develop competence in a wide range of social situations (social learning).

5.12 We go on to discuss these terms more extensively in a moment but it is worth noting that these activities are all engaged in as a matter of course by both children and adults in the ordinary course of their daily lives. Learners in school, given the opportunity and resources, are intensifying and, of course, extending and elaborating these powers beyond what is possible in ordinary social life.

5.13 A second point worth noting is that the capacities developed by these activities are all natural human powers (even accessing a database by computer is essentially using a tool for a purpose, than which there is nothing more characteristically human.) Furthermore, they are powers which develop in the process of maturation both psychological and physical. But there is no simple genetic mechanism at work here; the pace and degree of development of these powers, including the powers of reasoning, depend upon experience. It is experience that calls upon the use of these powers, and it is their use that develops them further. Our model of curriculum, therefore, is the active use and development of these powers within a range of experience in order to enable children to grow in their understanding of, and their effective functioning within, the environment.

Language Development through Active Use

5.14 Of all the powers which we assert should be developed across the curriculum, none is more important than language. The obvious reason for this is that meaning is communicated from teacher to learner principally by means of language. Over the last ten years the important relationship between language and learning has been increasingly and effectively acknowledged. For instance, there has been valuable attention paid to reading difficulties offered by textbooks, worksheets and assignments in the awareness that unnecessary complexity of grammar, abstract or unfamiliar vocabulary, undue length of sentences create barriers to understanding and learning. Collaborative teaching and shared lesson preparation involving experienced remedial teachers has greatly encouraged an alertness to the problems that inappropriate language can create.

5.15 Much of this kind of valuable work, however, remains rooted in a conception of the nature of language, which, though true, is limited. Language is, of course, a means of communication, but it is more than that: it is the principal means by which we represent our experience to ourselves, by which we make experiences our own, by which we manage experience. It is the principal means by which we construct meaning for ourselves.

5.16 It follows that it is essential for learners to acquire and develop language skills. From that it follows that learners must be 'given' these skills. And so they must, but what has to be grasped is that language can only be 'given' effectively in the context of its purposeful use, in precisely the way that it is 'given' — or better, learned — in the context that it is first acquired and developed. Children first use language to fulfil their own purposes; their language is developed by their teachers — usually their mothers — by the process of feedback.

5.17 Language is not acquired in the abstract; it does not grow on its own. In looking at language both as an objective historical phenomenon, and as the subjective possession of individuals, it is plain that language develops when there is a need. The vocabulary of English has grown, for example, as technology has created new artefacts (the language of computer science is the obvious example) or as social change has created new relationships (the women's liberation movement has introduced new vocabulary items and has put a strain on some of the conventional uses of pronouns), or as new processes or concepts develop in any field of activity (education and schooling yield examples of this). Just as the language itself develops under pressure of new needs, so does the individual's command of language. This is most obvious in pre-school children who clearly acquire language to satisfy their own requirements but it remains true throughout an individual's life. Conversely, we are baffled by language (except in cases when it is ineffectively used) not because of any inherent difficulty in words (bits, bytes, and interfaces, for example) but because we do not know or understand the artefacts, the functions, the relationships, the concepts that the words stand for.

5.18 When, therefore, "Language Across the Curriculum" policies ask teachers to be alert to language in whatever area of the curriculum they are working, this is not an additional demand. Teachers are not being asked to teach "language" *as well as* science, or history or craft. The language is an integral feature of what is learned and how it is learned.

5.19 And when something goes wrong with the language, this is more often than not a sign that something has gone wrong with the learning.

5.20 It follows that language skills cannot be taught out of context. To recreate appropriate contexts in order to teach specific language skills (as an English teacher might recreate a scientific experiment or investigation in order to teach something about scientific report writing) is an uneconomic use of time. Every course and every lesson in every aspect of the curriculum needs to be designed with language use in mind.

5.21 This view of the place of language as a permeating feature of the curriculum, and that it is best developed in context, is consistent with the developmental view of the learner and with the social nature of learning which we have offered. It is consistent too with the value we place on purposeful enquiry and investigation in order to solve problems. It is that kind of activity that generates the wide-ranging uses of language — from preliminary discussion, through collaborative enquiry to reporting informally and formally, to evaluative discussion — that enables language skills to develop. It is that kind of activity too that provides the teacher with the opportunity to make her or his most powerful contribution to learning and language, by entering into interactive discussion with pupils, asking them to articulate what they are doing, why they are doing it, challenging them to think and rethink, to consider evidence they may have overlooked or to consider approaches they may have neglected. It is the opposite of the learning-teaching situation which places pupils in a passive role in relation to a teacher who seeks to transmit knowledge without offering pupils the opportunity and support to internalise it and make it their own by formulating it in their own language.

5.22 This is a teaching style which puts great demands upon the teacher. There are situations in which particular pupils are in need of such attention as they grapple with difficulties that the presence of a second, collaborating or companion teacher is valuable.

Co-operative Learning

5.23 We argue for the social and interactive nature of language development and the learning it is associated with. It is not only in interaction with the teacher, but in interaction with other children in the learning situation, that this development takes place. This is one reason, but not the only one, why we commend what we have called co-operative learning.

5.24 Teachers in reviewing curriculum and the experience children have of it should ask what opportunities exist for children to learn to collaborate in constructive activity. The reality of nearly all social and working life after school is that it is based upon co- operating with others. Until recently nearly all formal schooling seemed designed to prevent the development of co-operation and collaboration among pupils. It was, and sometimes is, called cheating.

5.25 Every opportunity should be taken to encourage children to work together to some end or outcome. In practical subjects this is not too difficult to arrange. It may require in the academic subjects some fundamental rethinking and reorganising. This applies in primary as well as secondary schools because there is evidence to suggest that while children now generally are arranged in small groups, they do not necessarily work together as groups. Reports to us from H M Inspectors, as well as research reports such as *Inside the Primary Classroom*[1] and John Raven's *Opening the Primary Classroom*[2], tend to confirm this view.

5.26 There are features of school practice that operate against co- operative learning. The individualised worksheet is frequently used for purposes that could be more fruitfully tackled co-operatively. Such an approach would not exclude the use of worksheets but use them in a style different from what seems now to predominate. The latter very commonly consists of information-giving, in words or graphics or both, followed by testing devices hopefully establishing that the information has been grasped and comprehended. Co-operative activity is better generated by worksheets that set problems, or, even better, which enable children to identify a problem for themselves. The information provided, which may be rich, is of a kind that contextualises the problem, and it may set out constraints as well as offering support. Such a style creates the need for pupils to *find* relevant information from authentic sources in order to solve the problem or achieve the purpose. Part of the pupils' work in this co-operative enterprise is to decide what information they need. Thus are specific bits of knowledge placed in a proper relation to purposeful activity.

5.27 Co-operative learning has to be based on a view of learning that places purposefulness first. The best current practice does this: it is part of the developed and accepted view of primary education and of some areas of the secondary curriculum. Hence the frequency, in primary schools, of the project or topic study as a way of organising children's learning — a set of activities which are purposefully directed to some outcome. These activities generate associated activities, which may indeed be highly specific learnings involving the acquisition of information, the struggle to comprehend and apply it, the effort to put bits of it together in new relationships. But the context of purpose is what holds it all together.

Independent Learning

5.28 Working with others is one of the bases for learning to work and learn on one's own. Teachers reviewing curriculum provision should ask if children have opportunities to develop the skills of independent learning. By that we do not mean the same thing as "individualised learning", which tends to be the working through of a set of tasks or assignments in such a way as to enable the individual to proceed at his own pace.

5.29 We mean rather fostering the ability to identify what needs to be done to achieve a particular purpose, to plan for its achievement, to follow the plan, and to evaluate how successful the activity has been. It includes knowing when to ask for help. It is not isolated activity. It is the developing ability to proceed effectively through learning tasks without being directed at every turn by a teacher, or a teacher surrogate in the form of a class programme, a worksheet, computer program or textbook. It is the developing ability to see and to use books, computer programs, the teacher and indeed other adults, as resources for attaining the learning purposes.

5.30 Some of our readers will be surprised and sceptical at this recommendation. There exists a widespread assumption that independence in learning is something that school students are not ready for until as late as the sixth year of secondary.

5.31 Nothing could be further from the truth. Independent learning is fostered consciously and is arguably most widely to be found in the earliest stages of the primary school. It is a set of skills and attitudes that need constant fostering and opportunities to grow. The power to learn independently cannot suddenly be generated in the Post-Higher year, nor, alas, in college or university after school has been left behind. We argue here for the capacity to learn independently to be established as firmly as possible over the years 10 to 14, not only because we believe that good learning habits have to be established at this time, but because we fear that from age 14 onwards the increasing pressure of the examination system will continue to leave less and less time to attend to the styles and strategies of learning that may be the most effective for performing well in these very examinations.

5.32 We have concluded as well that, as with the case of co-operative learning, much traditional practice operates *against* acquiring the capacity for independent learning. We have come further to believe that the profession does not, in adequate measure, possess the skills and techniques to promote independent learning. We recommend that research and development work be undertaken across a wide spectrum of curriculum to identify and develop such skills and techniques.

Access Skills

5.33 In order to engage in co-operative learning and to achieve independence in learning, children need to develop skills in information retrieval. By information retrieval we mean those processes by which we obtain stored data in whatever form. We are particularly concerned, however, that pupils 10 — 14 should be given instruction in library and reference skills. Too often such instruction seems haphazard and perfunctory, usually occupying a few library periods in early secondary and covering accuracy in the use of the central catalogue, the Dewey (or other) system and an indication of the range of reference books available. If the desirable outcomes concerned with effective independent learning are to be realised, a more thorough continuous programme has to be instituted and 10 — 14 is the age for it. Skills in the use of dictionaries (and their disadvantages), the value and use of indices, contents pages, footnotes etc., *should be employed across the curriculum* and taught to a locally agreed plan[3].

5.34 Access skills should be practised in a wide range of contexts across the curriculum over the 10 — 14 stage. There are two dangers to avoid:

(a) isolation of practice which results in failure to transfer skills into practical contexts, and

(b) loss of rigour because cross curriculum activities tend to be left by everyone to everyone else.

5.35 Information retrieval involves accessing databases by means of the computer keyboard. This is one aspect of computer awareness, other aspects of which we deal with in Chapter VI (Para 6.50). But keyboard facility should be acquired as early as possible, and we recommend that in first year secondary there should be available special tuition for those who have not developed an adequate competence in using the keyboard to access information.

Learning to Learn

5.36 Teachers should ask if curricular provision is helping pupils progressively to improve their understanding of their own learning. There is good reason to think, following the studies and research of Nisbet and Shucksmith,[4] that the awareness of how your own mind as a learner is working, the monitoring of the effectiveness of your learning, the ability to try new learning strategies, is of significant importance to being a successful learner.

5.37 This means that as part of setting up an assignment or learning task, teachers should give pupils an opportunity to explore how best it might be achieved. This extends from relatively simple and specific tasks such as learning a spelling to more complex investigations and extended studies.

5.38 It should involve introducing children to study techniques (information retrieval, note-taking, text-shredding and so on) and to idea-generating techniques (like "brainstorming" and "mind-mapping") and to planning techniques[5]. Children need constantly to be encouraged to be aware of, to consider and choose from, a range of possibilities. They need to be encouraged to evaluate the effectiveness of the techniques they have chosen.

5.39 This is another area where much development work needs to be undertaken and we recommend that it should be further researched.

Problem-solving, Investigation and Reasoning

5.40 We have several times commended investigation and problem-solving as a highly valuable teaching method which will encourage other valuable kinds of activity in school. Our experience in using the term 'problem-solving' in discussion with witnesses suggests, however, that it is sometimes understood in ways we do not intend.

5.41 We do not use it to mean the construction by the teacher of artificial problems (as, notoriously, in old style arithmetic books) with a pre-determined answer, the true purpose of which is to exercise the learner in some skill or other. Nor do we mean to suggest that all problems of an authentic nature have solutions which children will be able to discover or construct. Especially, we do not wish to suggest that all problems do have a solution.

5.42 What we do mean is this. The learner should be brought into the kind of experience typical of much human achievement — where a goal has to be achieved in the face of certain constraints and within certain limits, and where skills and thought are directed to achieving that goal. Where the 'solution' is one of many possibilities, the pupil learns why some solutions are preferred to others in reality, and learns about the wide range of criteria people use when choosing how to act.

5.43 Open-ended problem-solving is now acknowledged as a crucially important teaching approach in technical subjects, in technology, and increasingly in mathematics. It has probably always been present in good art and design teaching : what sort of materials and techniques can be used to achieve the effect wanted or the product desired? We commend this and refer again to this matter later.

5.44 All these curricular areas including mathematics can be thought of as 'practical' subjects. We now commend the extension of the investigative problem-solving approach to

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what are loosely called 'classroom' or 'academic' subjects. In this context, particularly, it is perhaps better to talk of problem-focussed, or even issue-focussed, approaches.

5.45 Such approaches are not uncommon in primary school environmental studies. They are closely — and properly — associated with enquiry, the issue or problem providing the purpose for the investigation. (Without such a purpose, of course, work of this kind can too easily become rather aimless information gathering). The 'issue' or 'problem' or 'purpose' can range from a highly focussed social problem — such as where, in a new community, to situate a factory which may present dangers of some sort — to a broad purpose of a scientific nature — such as a descriptive, or even taxonomic, account of life in a local pond. We wish to see included in this approach those subject and curriculum areas which traditionally have presented, not problems, but answers. We want, in history, for example, to see children share in the problem-solving and decision-making that people in the past had perforce to engage in. How should authorities in the course of the industrial revolution have provided for the inflow of population to the cities? How should a particular politician have dealt with the issues that faced him? Additionally, we want children to share in the historian's problem: there is the evidence he has; how should he interpret it and what explanatory account should he offer? Could he, should he, have offered an alternative explanation? All 'academic' subjects present similar opportunities.

5.46 We raise this matter at this point in our report, rather than delay it for our Chapter on Learning and Teaching for one very important reason. That 'knowledge' is a construct, is an idea that should permeate the curriculum and be part of the climate for learning. Our 10 — 14 learners should, by entering themselves into the activity of constructing explanations, be enabled to understand that knowledge is something that *has been made*; through this experience they will recognise that knowledge *can be re-made* : that whatever our current explanations of the social, physical and inner worlds, better explanations may be possible. Every learner should feel that she/he can, potentially, contribute to the making of new understandings, new knowledge, as well as new artefacts. That the idea of change be built into the very perception that people have of knowledge is perhaps the best basis for education in an era in which technological change is producing rapid social change.

The Nature of Knowledge, Ways of Understanding and School Subjects

5.47 We are here coming close to equating knowledge and understanding. We recognise, of course, that there are perfectly proper distinctions to be made between the two concepts. The emphasis we wish to give at this point in our argument, however, is to the idea that the knowledge we should teach is not simply a collection of items of information, but rather that it is a set of ways of understanding. "Understanding" is a key term in our statement of aims, and a key idea in our view of education at 10 — 14 because it is the link between the learning processes that go on in the private world of the individual's mind, and what is to be learned, namely, the great bodies and systems of public knowledge and information with their developed procedural principles, public tests for truth, axioms and assumptions. Our thesis is that just as these bodies and systems have been constructed by the minds of human beings as they face issues, problems, needs — including needs to explain and make sense of things — so understanding will be achieved by learners as they construct and re-construct knowledge for themselves. We are proposing that what the Munn Committee[6] identified as the claims of psychology and the claims of epistemology to shape the curriculum are not in competition, but in harmony with each other.

5.48 Not all understanding, however, is of the same kind and various attempts have been made to identify the most general varieties of understanding, the inclusion of which would guarantee breadth in a common curriculum for general education. We are aware that all of these efforts to find an epistemological foundation for the curriculum can be challenged at least in detail. Nevertheless we are convinced that a 10 — 14 curriculum which did not include an introduction to mathematical, scientific, historical, moral, aesthetic and religious ways of making sense of experience, or which did not bring pupils to some understanding of themselves and other people, would be lacking in breadth.

5.49 One disadvantage of thinking in terms of different ways of understanding is that it has sometimes obscured their relatedness; another is that they have sometimes been regarded as static. These are both misconceptions. The forms of understanding have all grown from the same roots, man's attempt to make sense of his experience, and they are interrelated and interdependent in a lot of ways. Further, they are still changing; new forms may appear. And knowledge itself is not static. Our world view constantly changes, and to convey the impression to children that there is a set of fixed right answers to every question is to inhibit possibilities for human growth. But though knowledge and understanding are features of mind, and subject to continuous development, they are by no means independent of things outside us, and their validity at any time depends on agreed methods of enquiry and on agreement about concepts and meanings among experts in the various forms of understanding. It is an important function of schooling to introduce pupils to the available forms of knowledge and understanding in order to give them access to powerful ways of thinking. But while it is essential to ensure curricular breadth in terms of these ways of understanding, it is also very important that they should not become isolated from one another in pupils' minds. Such ways of understanding are not "subjects" though they may be acquired through the study of subjects. For example, scientific understanding may be developed through various science subjects. Unfortunately, it is possible for pupils to study subjects with little development of their understanding. Ways of understanding can also be developed, to a considerable extent, through an undifferentiated approach to an appropriate variety of experiences such as might be achieved in a carefully chosen sequence of topics involving experience of the social and physical environment. It is the responsibility of teachers over the 10 - 14 years to ensure that pupils do develop breadth of understanding; the pupils should become progressively aware of the different ways of understanding; and it is likely that any curriculum design will have to provide some special time allocations for special attention to some at least of the ways of understanding we have mentioned. However, we would urge that the inter-relatedness of all forms of knowledge and understanding be kept in mind at all times.

5.50 The developmental view of knowledge recognises that "disciplines" and "subjects" do emerge and have conceptual reality. The developmental view of learning (sketched in Chapter III) recognises that learners will come to see the need for specialist knowledge of aspects of the world in order to operate in it and make sense of it. The importance of the specialist is therefore confirmed as is, consequently, the Scottish tradition of secondary staff highly qualified in at least one branch of knowledge. But we are very firmly proposing a shift of emphasis, which for some specialists may be a shift in role. They should in participating in the planning of curriculum and of courses have a new question in mind: not "How can the timetable accommodate my subject?" but rather "How can my subject contribute to the aims of the curriculum?"

Developing Social Competence

5.51 We have argued for active learning within a dynamic view of knowledge. In classrooms where such activity takes place, the learners are not only developing ideas but also acquiring capacities to negotiate ideas, express convictions and uncertainties, sustain and support arguments, listen to, comprehend, deal with the arguments, attitudes, feelings of others. They learn the value and the difficulty of co-operation, the need to exercise toleration and firmness. They explore issues with their peers as well as with the teacher. They make decisions about how to do things and begin to practise responsibility for their own actions and decisions. They are developing social competence. They are being educated for responsibility as well as for enterprise.

5.52 It is easy to dismiss such suggestions as unattainable idealism. It is tempting for teachers to short-circuit the processes involved, especially when a heavy content syllabus has to be got through. It is hard to assess the skills and competencies that develop. But it is surely impossible to deny the importance of the experience, the importance of the desirable outcomes that are aimed for, and therefore the importance of affording time and opportunities for the processes we have listed.

5.53 These processes should permeate the curriculum and span the primary secondary transition. It is difficult for a single teacher to initiate and sustain them, if they are not practised elsewhere. It is particularly dispiriting to hear reports of secondary pupils being denied opportunities to develop skills of co-operative and independent learning which they have begun to develop in primary schools. Accordingly, we recommend that teachers, in planning the 10 – 14 curriculum plan, for the promotion of consistent strategies for social learning, noting as they do so the congruence of the processes that lead to good cognitive as well as social development. There is genuinely an opportunity for economy of effort here.

5.54 We know it is difficult to agree about content. While a consensus on the desirability of some attitudes and social behaviours may be relatively easy to achieve, others quickly raise the problem of social values in a pluralistic society, a problem which is clearly identified in the Munn Report[7] and in the CCC's recent Position Paper on *Social Education in Scottish Schools*[8].

5.55 We offer the following suggestions to help schools and teachers in dealing with these delicate value-laden issues: firstly, schools should face up to the issues involved and set about clarifying their social aims and expectations. Secondly, the school's aims and expectations should become the basis of debate. As the CCC Position Paper puts it, "At the level of the development of a school policy, it is important to involve parents, possibly the community, through the school council, and certainly the pupils themselves in establishing a consensus on the values the school should incorporate in its social education programme"[9]. Thirdly, pupils should be given extensive opportunities to learn to articulate their views on what is right and wrong, to offer reasons in support of their positions, to take account of relevant facts, and to attend to the arguments offered by others. The moral and social aspects of education are very closely interrelated.

5.56 Schools, of course, cannot be held responsible for anything like the whole of a child's education, and nowhere is this more obvious than in the sphere of moral and social education. Here the co-operative efforts of teachers, parents, and a wide range of agencies with social responsibilities, must surely be developed. It follows that school-community relations are important and that teachers require skills in working with parents, outside agencies and other professionals. Recognition of the limits upon the direct responsibility of teachers for moral and social education carries another kind of responsibility — responsibility to work with other agents in the community.

5.57 The value system that a school seeks to promote is most significantly expressed in that elusive, but very real concept — the ethos of the school. We concur strongly with the authors of *Social Education : The Scottish Approach*[10], when they say that "Aspects of social education come through the organisation of the school itself, through policies and priorities which underpin that organisation and through the kind of ethos which it generates". So far, we have discussed conscious policies affecting teaching, learning, and the relationships between learners and teachers and among the learners themselves. We have been concerned to show how a good climate for learning may be consciously constructed. Various writers and documents, including the Munn Report, have in recent years made much of the distinction between the overt and consciously controlled lessons we teach, and the "hidden" curriculum, the messages and meanings we communicate through our attitudes, assumptions, behaviours and the school organisation that embodies them. We ask teachers to direct attention to this distinction because we think teachers planning and implementing a 10 — 14 curriculum should be aware that what teachers think they are teaching may not necessarily be what their pupils are learning.

The Hidden Curriculum

5.58 Human nature being what it is, this paradox is possibly incapable of complete resolution. Ultimately, we all make our own meanings. In the education of children, however, especially those in intellectual, emotional and social transition from the contained world of childhood to that of adult responsibility, it is imperative that we keep under review the total model offered. This means we must regularly patrol the "shadow line" between the two curricula.

5.59 To be specific: there are experiences which we consciously arrange for our pupils — content, context, tasks and tests. There are methodologies we select for ourselves as teachers and for the children as learners; there are outcomes we designate as successful, and there are responses we make to the various degrees of success demonstrated. All of these are "overt" and professionally considered choices on our part — but because they are choices they reveal the assumptions that underlie our interpretation of our professional role. It is precisely this revelation that is "hidden" for too many of us.

5.60 It influences all our pupils, however, and it is extended and reinforced by our general classroom behaviour. What we think relevant and important will be revealed by the extent of our acceptance of our pupils' experience and by the time we give to discussion of their views and interests. Our assessment practices, the time we spend on particular topics and the opportunities we allow for choice all teach children about the value we really put on different elements of the curriculum. There is little point in declaring the high value of aesthetic and practical activities, for example, if various aspects of our practice convey to pupils that other things are much more important. The system of rewards and sanctions we operate reveals our own value system; our language, and our reaction to theirs, advertise our assumptions about society.

5.61 In other words, our classroom climate crackles with subliminal signals — about our moral priorities, our view of society and the individual's place in it, our very concept of education itself. And our pupils become adept at reading these daily messages.

5.62 Having picked up "what school is really saying" most children will, however unconsciously, take the line of least resistance (or most insistence) and tailor their classroom and learning demeanors to the necessary conformity. Some will reject the norms which they sense are being offered to them. Some will be capable of doing both simultaneously. Others will be confused and dispirited at a time of life when contradictions of precepts and examples can vitiate the young person's view of the worth of learning. The lessons of the hidden curriculum are often the most enduring of all.

5.63 Nor is it the hidden curriculum of individual classrooms only that is at work on pupils: it is also the influence exerted by the ethos of each school they attend. The school as a social organisation, as a manifestation of the society which directs it and on whose principles it is founded, must itself offer a working model of those principles.

5.64 This is not an easy topic to engage with. Furthermore teachers are human; they are hard-worked, subject to moments of irritability, impatience, insensitivity. To give attention to thirty individuals and simultaneously to give attention to onself giving attention ... this is decidedly not easy.

5.65 Nevertheless it is an aspect of our pedagogy that we have taken too little care of — even with all the evidence available — of how children are influenced against school and against learning. To come to grips with it, however, need not, we suggest, entail voluntary schizophrenia on the part of teachers, nor need it inhibit the vitality of schools as organic communities of teachers and learners. Our basic proposal that teachers should plan 10 — 14 together offers a forum for the discussion of this issue against a background of actuality. It is likely to surface from shared and debated descriptions of methodology, pace and sequence of learning and methods of assessment. It is in these matters that attitudes to pupils and expectations of them are embedded. Discussion might well begin on specific matters of methodology and then proceed to broader issues but going back to the specific aspects of teacher behaviour and school procedures which directly affect pupils.

5.66 Individual teachers themselves, however, should — gently — initiate some analysis of their own classroom operation, with a view to offering comparisons and sharing insights with colleagues. The "desirable outcomes" identified in this report can be used as an instrument for a teacher to review his/her own behaviour. For example, if teachers hope to encourage children to respect the opinions of others, do they themselves demonstrate this tolerance in classroom exchanges? The suggestion we shall make, following Nisbet and Shucksmith[11], that teachers should do more "modelling" of learning behaviour for their pupils, holds good for a general pattern of interpersonal conduct — in the class and in the school dining-hall or assembly. The practice in pre-service training of using videos to analyse classroom events and strategies is one that staff might occasionally adopt and colleges of education could make facilities available for such "micro-teaching" sessions. Secondary staff working in congenial co-operative teaching arrangements could take the opportunity presented by shared classes to engage in mutual evaluation of attitudes.

5.67 We offer, as examples, in Appendix A some of the issues that classroom teachers, as individuals and in discussion together across both sectors, and school managers might have to bring to light in order to establish the outlines of the hidden curriculum they have unconsciously created.

5.68 We have already acknowledged that staff development in this area is ultimately the responsibility of those engaged in actual schools with real pupils. Where and how to start, how to gauge pace and progress cannot be determined by checklists. But while in this section we have been properly cautious in proposing ways into a difficult area, we are very firmly convinced of the importance of gaining access to the hidden curriculum, difficult and unsettling though it proves to be.

5.69 We most strongly urge, therefore, that in the regular process of consultation among the teachers of the later primary stages and between those teachers and their colleagues who teach the early years of the secondary stage, consideration should not be confined to details of content but should include matters of relationships with pupils and the expectations that relationships include.

The School Community and the Grouping of Learners

5.70 Part of the ethos that every school will wish to create is the sense that all its members are valued equally as human beings and for what they have to contribute to the life of the school. This applies to non-teaching staff as well as to teachers at whatever level of seniority. This is not at all at odds with the existence of a hierarchy of responsibility, and the regard that has to be paid to the authority of those carrying special responsibility. The need for equal valuation applies as well to the subjects professed in a secondary school. There exists an unfortunate tradition in which some academic subjects have acquired a prestige at the expense of the valuation placed on certain other subjects. Attitudes of this kind are to be found in society and in the community as well as within schools, although the subjects involved may vary from school to school.

5.71 Such attitudes are without justification within the kind of experience we believe schools should offer 10 — 14 year olds. But they are the kind of attitudes most readily formed at this stage and especially in early secondary. They are particularly powerfully conveyed through the "hidden curriculum". Teachers must be alert to the messages they may convey unintentionally in this matter.

5.72 Above all, schools will wish to make it clear to the most important members of their community — the pupils themselves — that all pupils are equally valued and that they should value each other equally.

5.73 To say that is not at all to say that all learners are the same as each other. On the contrary, it is to recognise and to value individual differences. Individuals differ in a host of ways. We shall later (in Chapter VI) discuss physical differences. Clearly there are differences in attitudes. There are great differences in personality. There are differences in range and mastery of skills of various kinds. There are differences in conceptual development both in range and depth. There are differences in social experience that can be drawn upon.

5.74 Nor are the differences to be thought of solely as *between* individuals. There are important differences *within* each individual. In the same pupil, at a particular period, one characteristic may advance, while another rests unchanged; some aspect of cognitive development may surge ahead while social development lags; one aspect of experience may fascinate while another lacks interest. Characteristics such as these interact in complex ways to produce unique and changing individuals.

5.75 This is true at any stage of human development. But it is particularly true during the 10 — 14 period because of the changes associated with puberty, which itself affects different children at different ages.

5.76 Because we recognise the existence of individual differences and believe that all members of a school community should be equally valued, we favour "mixed ability" grouping as the basic mode of grouping children. The term "mixed ability", however, is too narrow because there are dimensions other than "ability" to be considered. One of those dimensions is self-image. Pupils in sets regarded as "low ability", for example, or those permanently in low groups within a primary class, form a poor image of themselves as learners. Equally, the system creates low expectations in teachers which in turn are transmitted to the pupils. The combined result is low achievement of pupils and in the worst instances, neglect by teachers.

5.77 Consequently, we cannot recommend placing pupils into "streamed" or "setted" groups on any long-term basis. Such approaches, which provide (apparently) homogeneous groups, can be based on only a very few features of pupils, as assessed at one particular point in time. We refer to "any long-term basis" because there are indeed times when pupils with like needs, or interests, or skills, should be working and learning together. But this is an argument for flexibility of organisation, not for long-term streaming or setting.

5.78 We have paid special attention to communications which have favoured streaming or setting in certain curricular areas (particularly mathematics) in the secondary school. Testimony, however, is far from unanimous, and the value of having together learners of varied attainment levels has been pointed out to us. The increasing familiarity of teachers with organised resources designed for learners at varied levels of attainment has also been brought to our attention.

5.79 On the other hand we have no doubt that teaching mixed ability classes throws a sharp light on difficulties and constraints upon good teaching which can remain concealed and ignored in streamed or setted situations. Individual differences, which are present in all groups, force themselves upon the teacher's notice. The need to spend time sorting out individual learning problems, which is equally needed in sets, is seen as much more pressing. Inadequacy, inappropriateness or inaccessibility of resources cannot be got round so easily. The need for longer periods of time so that individuals can internalise concepts and skills is another need less easily ignored.

5.80 But these are issues different from the issue of principle which we favour that classes should not be streamed or set during the 10 — 14 period.

5.81 An important positive contribution is made to the climate for learning by the message implicit in such mixed ability groupings that the variety of characteristics possessed by human beings is itself a value, and a resource.

The Place of Pupils with Recorded Special Needs

5.82 With the current impetus towards increased integration of pupils with recorded special educational needs it is of the utmost importance that such pupils have access to all the aspects of experience which we propose as the basis for curriculum design in Chapter VI. We appreciate that classroom groupings containing children with physical, sensory or mild mental handicap can present complex teaching situations; nonetheless, we submit that the sharing of curriculum planning at local level — which will involve staff from special schools or units and draw on the expertise of the Child Guidance Service — will result in the identification of methodologies to allow the maximum possible participation. Our emphasis in this report on independent learning and on appropriate diagnosis and differentiation reflects our conviction that curricula must be discussed with the whole age group in mind.

5.83 For this reason, moreover, we would see our recommendations as having no less force for the design of the curriculum of those pupils with more serious disabilities, those for whom integration is likely to be severely limited. Accepting that adjustments will have to be made and expectations realistically limited, we nevertheless urge our model as a baseline for provision in special schools and units — and, again, we would stress the reciprocal benefits of team planning among all neighbourhood schools.

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5.84 We have part-titled this chapter "The Climate for Learning". Perhaps that is too unambitious. It should be apparent that what we are here dealing with are the very basics of a good education, more important than any specific subject skills or knowledge. Teachers, especially in secondary schools, have been trained — by the whole system, even by our whole culture — to think of themselves as persons initiating the young into specific disciplines. The historian with his first year class probably still has his eye on "Higher" history. We are asking teachers, not to abandon their specialist knowledge and skills, but to set them during the 10 — 14 period firmly in the context of the creation of a good climate for learning as we have here described it.

SUMMARY

The climate for learning includes the home, the community, the school and the wider world. In their interaction with the immediate and wider world young people not only learn to make sense of various aspects of experience, they develop their personal powers for making sense of experience. Important among these powers are language; investigative skills; reasoning; interpersonal skills; learning skills and strategies; the ability to learn both independently and co-operatively; and skills which give access to stored information. In this chapter we are especially concerned with the school and classroom climates which influence the development of these capacities. We also argue that pupils should begin to develop those ways of understanding which have developed in the history of human investigation of various aspects of experience.

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CHAPTER VI

TOWARDS CURRICULUM DESIGN 3. THE RANGE OF THE CURRICULUM

6.1 Our last chapter dealt with some broad elements of the school and of learning and teaching that penetrate and interfuse the whole curriculum. These elements, we have said, come together to form the climate in which particular acts of learning take place. We move now to consider the range and balance of the curriculum in terms of the areas of human skill, knowledge and experience which pupils should encounter and learn from.

6.2 We base our recommendations here on the overall aims already summarised as: helping children to acquire the competences they need to operate effectively and ethically in society, and helping them to make sense of themselves and their world.

Aspects of Experience

6.3 That statement implies a range of learning experiences which can be represented as a spectrum from useful skills of a practical and social kind at one end to an introduction to the established ways of knowing and understanding at the other. On that spectrum there are points where related skills and understandings come together in meaningful clusters and we have used that image to differentiate nine aspects of experience which should receive balanced attention in the 10 — 14 curriculum. A *differentiation* of this kind is essential for planning the curriculum, but we are as conscious of the *links* between the aspects as we are of their distinguishing features. For this reason we represent in Figure 1 the aspects of experience as a unity, each aspect relating to every other through the aims and the desirable outcomes.

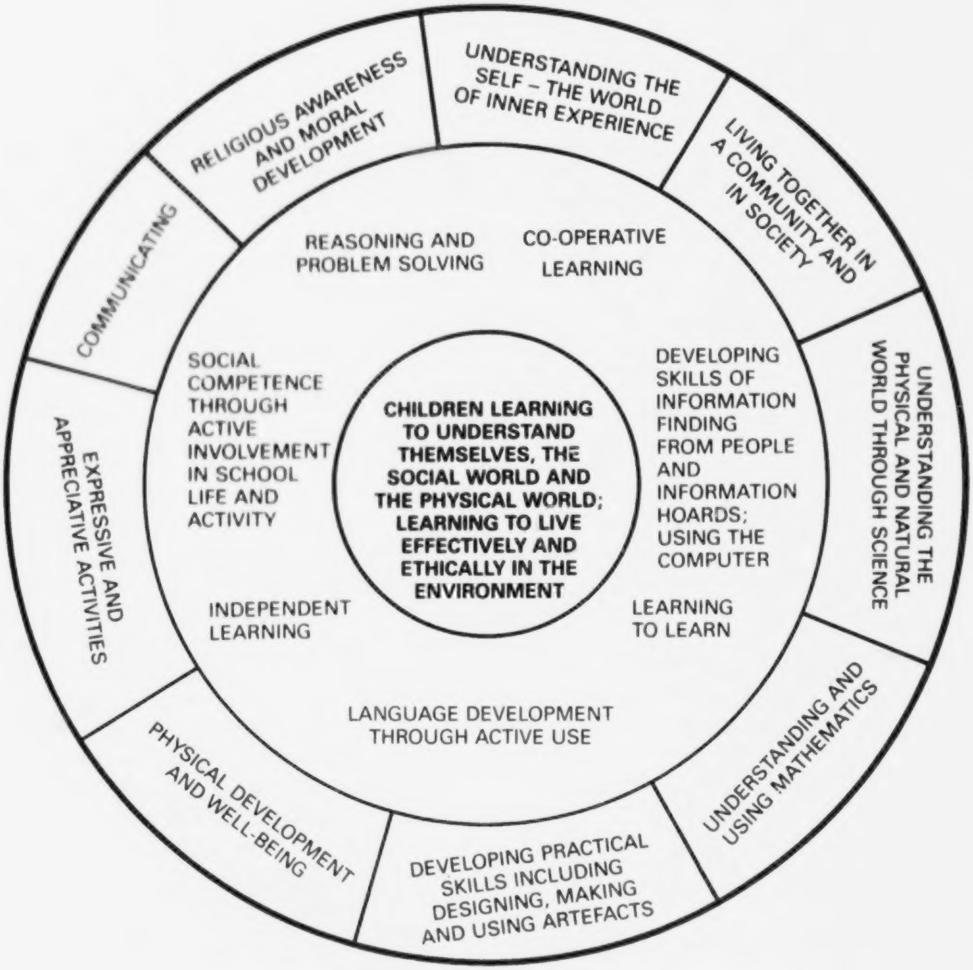
6.4 We must emphasise that we are not proposing a nine subject structure for the curriculum. There are, as we shall argue, many different ways to organise children's learning experiences to achieve the desirable outcomes through these aspects of experience. Nor are we offering an alternative to the "modes of activity" on which the curriculum in S3 and S4 is based. On the contrary we see these "aspects" as descriptive categories leading into the modes and the subject specific courses of S3 and S4. The courses which make up the S3 and S4 student's curriculum can be seen as developing out of the kind of work we envisage in S1 and S2.

6.5 We now set out *aspects of experience* we consider essential to a balanced 10 — 14 curriculum.

The World of Inner Experience

6.6 This area concerns how people experience their own lives, their subjective feelings and emotions. It allows children to recognise in themselves and others primary emotions and drives: love and hatred, altruism and selfishness, vanity and humility, cruelty and kindness.

Figure 1 – Curriculum Design 10 – 14


CHILDREN LEARNING TO UNDERSTAND THEMSELVES, THE SOCIAL WORLD AND THE PHYSICAL WORLD; LEARNING TO LIVE EFFECTIVELY AND ETHICALLY IN THE ENVIRONMENT
REASONING AND PROBLEM SOLVING
CO-OPERATIVE LEARNING
DEVELOPING SKILLS OF INFORMATION FINDING FROM PEOPLE AND INFORMATION HOARDS; USING THE COMPUTER
LEARNING TO LEARN
LANGUAGE DEVELOPMENT THROUGH ACTIVE USE
INDEPENDENT LEARNING
SOCIAL COMPETENCE THROUGH ACTIVE INVOLVEMENT IN SCHOOL LIFE AND ACTIVITY
RELIGIOUS AWARENESS AND MORAL DEVELOPMENT
UNDERSTANDING THE SELF – THE WORLD OF INNER EXPERIENCE
LIVING TOGETHER IN A COMMUNITY AND IN SOCIETY
UNDERSTANDING THE PHYSICAL AND NATURAL WORLD THROUGH SCIENCE
UNDERSTANDING AND USING MATHEMATICS
DEVELOPING PRACTICAL SKILLS INCLUDING DESIGNING, MAKING AND USING ARTEFACTS
PHYSICAL DEVELOPMENT AND WELL-BEING
EXPRESSIVE AND APPRECIATIVE ACTIVITIES
COMMUNICATING

Recognition, acknowledgement of such feelings and reflection upon them, encourages rationality about the irrationality that characterises much human behaviour.

6.7 This aspect of experience is perhaps most readily accessible from stories, novels, poems, plays for stage and television and from films, these being offered not, in the first instance, as artefacts or as artistic constructs, but as insights into, images of, descriptions of human behaviour which can be matched with one's own experience and reflected upon.

6.8 As important in the exploration of individual human behaviour as reflecting upon the work of others is the making of one's own stories, poems, dramas (for TV or film as well as "live" performance). The act of making is highly motivating, valuable in its own right and a powerful way into the understanding of the nature of media constructs.

6.9 The idea of the literary artist as "astronaut of inner space" is not uncommon, and the role of the English teacher in helping children to explore "inner space" is well enough recognised but perhaps underemphasised in recent curriculum development which has stressed the instrumental aspects of English.

6.10 Nor is the English specialist, or the primary teacher in her or his role as mediator of story in literary or dramatic forms, the only guide through this area of experience. It is a central concern of the drama specialist, and a very important concern of the history specialist, and of the teachers of religious education, social education and guidance.

6.11 This focus, on the subjective and the personal, links with understanding society and social organisation, with ethics and morality, with religious studies and with music and art — especially when these operate as expressions of individual vision. It is a basis for development of more specialised study of the media of communication (including the mass media), of the arts, and, among the human sciences, of individual and social psychology. It is highly important for multicultural education. Not only does it reveal a common humanity among people, it reveals too how they differ in their perceptions of the world, depending upon the culture which has helped to shape them.

Living Together in a Community and in Society

6.12 This aspect of experience is very wide-ranging. Human beings are social beings and must live together to live at all, and they must therefore consciously organise themselves for living together. In order to develop this aspect of young people's experience, schools must provide opportunities for learners to explore our present forms of social organisation, how and why they have come into being, what alternatives exist, and what value systems are embodied in various patterns of social organisation.

6.13 In accordance with our view of Education 10 — 14 as children learning to live effectively and ethically in the environment we believe that learners' understanding of institutions and events in the larger society should grow in association with insights into their more immediate experience of human behaviour in family, school and community. Over the years 10 — 14, young people become increasingly capable of reflection on how and why they themselves, and other people, feel and act as they do. Learners should, therefore, have opportunities to explore the patterns of human existence which concern them directly and also to extend processes of analysing and comparison outwards to a representative sample of cultures, life styles and institutions in their own and other countries.

6.14 Learners' attitudes comprise a mosaic of opinions, judgements, and conclusions on many facets of their community and society. Learners can be involved in activities which show the importance of founding judgements upon a respect for facts, evidence, accuracy and reason. Where everyone in a classroom is engaged in open enquiry into human society and behaviours, learners can begin to clarify differences between rational and non-rational statements, attitudes, and actions. By analysing their own views about issues of abiding human importance in various social contexts, learners can be encouraged to see their own value judgements as they are, and evaluate them as objectively as possible. This kind of self-awareness, and its corollary of tolerance towards alternative views, are central to the desirable outcomes to which we consider the 10 — 14 years should contribute.

6.15 Social understanding has many facets : economic, geographical, political, historical, sociological, and psychological. Expressed in terms of those disciplines, the goal of developing social understanding looks daunting indeed — it would seem to demand from teachers, individually and collectively, an array of expertise they are hardly likely to possess. This would be the case, however, only if we accept that teaching is based exclusively on transmission, where the teacher, who already knows 'all the answers to all the questions', will transmit this knowledge to the learners. Given an alternative view of teaching and learning, the goal of developing children's social understanding becomes more attainable. When, for instance, as part of their environmental studies in the primary school, a teacher guides learners along a path of enquiry into issues affecting a local industry, that path inevitably touches upon all these disciplines and raises questions which clearly involve economic, geographical, historical concepts and methodology. The planning process for that kind of enquiry can anticipate many (never all) of the questions that may arise, and that planning should draw upon the special expertise of teachers throughout their partnership of associated schools and the expertise of those engaged in the local industry.

6.16 Children will not learn every answer to every question (some of which remain unanswerable) through such investigation. On the other hand, they learn that certain *kinds* of questions have certain *kinds* of answers, whose validity must be tested in certain kinds of ways. Some answers must be based upon knowledge of the past and founded on evidence. Some questions demand information and understanding about how physical location is significant in the matter investigated. Some require answers that illustrate how demand and supply are linked. Some questions require the learner to analyse how groups and individuals behave in varying circumstances. Gradually, among much else, what children learn is the significance, value, and nature of specialised disciplines. We should provide the means whereby learners themselves can answer that question often asked - 'Sir, whit ur we dain' this fur?'.

6.17 An enquiry-based, investigative style of teaching in which learners formulate their own questions — and are led to recognise the significance of others' questions for their own lives and interests — should continue into the secondary school. The rich resources of knowledge and expertise of specialist staff, trained in disciplines which help make sense of social experience, should enable children to develop the learning they began in primary school, making it deeper and more sophisticated, as concepts (those ideas which offer the power to explain) develop and are encountered in a wider range of settings. This is why we welcome the concepts and skills approach recommended by the Scottish Central Committee on Social Subjects. We welcome too the Committee's proposals for co- ordination of social subjects and for collaborative models to bring together the range of expertise within the social subjects departments. We further commend the freedom which this approach offers schools, to select specific content such as the events, institutions, and locations to study. Schools will choose the content which is most suitable as a vehicle for developing learners' skills and concepts and which has the greatest interest for learners and teachers. A long and continuous experience of learning to understand how features of society come into being, how they work, and how particular ways of knowing contribute to that understanding, is the best preparation for pupils when they choose Standard Grade courses at the end of S2.

6.18 We do not wish to suggest, however, that this aspect of experience, "Living Together", is the exclusive domain either of the primary teacher 'doing' environmental studies or of social subjects specialists in secondary schools.

6.19 The concept of "Living Together in a Community and in Society" binds together much of those teachers' work, but other teachers also have their contributions to make. These clearly include, in the secondary school, specialists in English and in religious education, while classics specialists and modern linguists have a great deal to give from their understanding of other cultures. Teachers involved in science and technology should be alert to contributions they can offer to understanding social and cultural implications of those aspects. Indeed, every teacher has something of value to contribute to this aspect of experience.

6.20 The nine aspects we describe must not be isolated from each other. For example, this social aspect of learners' experience should be closely linked to their understanding of the physical world in which social activity takes place. Both of those aspects of experience are connected to others, such as practical, expressive, moral, and religious.

6.21 We believe that study of the local environment and selected features of Scottish society and culture is essential. There are also significant contemporary social concerns which should play a part in all pupils' experience. The list may vary somewhat from place to place and time

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to time, but in our judgement essential themes for every school today, include multicultural and international understanding, the effects of technology on society, equality of opportunities, and care of the environment. In their learning to live together in a community and society, pupils must have opportunities to explore the sources of inequality, prejudice, victimisation, and exploitation which may be linked to sex, race, creed, and nationality. No opportunity should be missed to nurture mutual understanding and respect.

6.22 "Living Together" is an aspect where children's learning can be powerfully affected by messages in the hidden curriculum. For example, a school's statements about equal opportunities have very limited effect if teachers convey in less obvious ways that they do not expect girls to become skilful in matters mechanical or boys to become competent in home-making.

Learning to Understand the Physical and Natural World through Science

6.23 Human beings have always sought to impose order on and to understand the physical and natural world around them. In order to achieve such an understanding, processes of investigating the world have developed which involve observation, contructing hypotheses and theories, testing, refining and modifying them. The explanation, prediction and control of the physical and natural world takes place, therefore, through a process or a way of proceeding which has come to be known as science.

6.24 Science has, for many years, also been a component of the school curriculum, in particular at the secondary stages. The secondary school science curriculum has, to a great extent, reflected the division and sub-division that has taken place in the world of science outside the school. The individual sciences of chemistry, physics and biology have all found their places in the science curriculum. Since the 19th century there has been an expectation that all pupils should study some form of science in S1 and S2. Curriculum Paper 7, *Science for General Education*[1], was introduced in 1969. It, along with *Memoranda 28 and 42*[2], attempted to help teachers to make appropriate provision for pupils of all levels of attainment. The basic principles of these papers pointed towards a pupil-centred course which encouraged pupils to think scientifically and to develop a wide range of skills and abilities as well as build up an increasing knowledge and understanding of the world. The evidence from the H M Inspectorate survey of S1/S2[3], however, seems to suggest that practice in secondary schools at S1/S2 falls short of these principles. While there is much practical work, the pressure on all pupils to cover the same activities in a given time has acted against good experimenting and has been detrimental to understanding.

6.25 In primary school the problem has been that of finding an appropriate and significant place for scientific experience in the primary curriculum. The last twenty years have seen a series of attempts to persuade primary teachers to devote more time to science in the primary curriculum, based on the evidence from H M Inspectors' surveys that showed that many primary children experienced little or no scientific activity in their primary career. Projects such as *Nuffield Junior Science*, *Science 5 — 13*, *Learning Through Science* and, most recently in Scotland, the SED's *Primary Science Development Project*[4] have attempted to develop science resources or, as in the latter case, attempted to find ways of giving teachers encouragement and guidance in the use of available primary science resources. The kind of scientific activity encouraged by projects and developments such as those mentioned has placed the emphasis on the *process* of scientific enquiry. Science has been regarded as the "discipline of applied curiosity",[5] and it is this stance that we believe must underlie the development of this aspect of experience at the 10 — 14 stage.

6.26 Such a view of development of scientific activity puts the emphasis on the process of science as a way of understanding the world. If pupils are to develop many of the desirable outcomes proposed in Chapter III it is essential that the many opportunities provided in scientific contexts are not missed. This is not however to imply that content in science is unimportant. Enquiry clearly has to be about something, process skills have to be exercised on some content. As in all development of understanding each successive stage grows on previous experience, and concepts about the world are built gradually from the data that is available through the process of investigation. Concepts such as "cause and effect", "interdependence" and "adaptation" can be gradually developed over a period of time and through a range of content topics; more specific concepts such as solid, liquid and gas depend upon a more specific choice of content. We believe that it is possible, within broad areas, for primary and secondary teachers to agree on the nature of the experiences that pupils will have within these areas, the concepts that are important and the process skills that can be applied and developed.

6.27 The beginnings of such an agreement on broad areas of content are already in existence. The Primary Science Development Project, referred to earlier, lists in its booklets for primary schools[6] four main themes for science P1 – P7 namely (i) ourselves, (ii) living things and their environment, (iii) materials, and (iv) energy matters. The Standard Grade Development for science at S3/S4 lists as its themes (i) healthy bodies, (ii) a study of environments, (iii) an introduction to materials, and (iv) energy. The similarities are clear and point the way towards a consideration of the 10 — 14 curriculum which is set within a developing scientific experience from 5 — 16. Such broad areas allow attention to the nature of the scientific experiences at P6/P7 and at S1/S2 and to the interrelation of the more specific topics at the various stages. We believe, however, that the existing secondary curriculum at S1/S2 is overcrowded with content and vocabulary, and that concept acquisition and understanding in depth are inhibited by overcrowded curricula that can only be covered by recourse to rote learning. We recommend therefore that existing developments at the primary stage be encouraged and that the secondary curriculum provide for the continuing development of the primary experience. Broad concepts such as permanence and change and general skills such as observation, questioning, planning, measuring, recording and inferring should be further developed and refined. New and more specific concepts and skills should be added and the understanding of the importance of scientific generalisations should be encouraged. The principle however should remain that pupils are engaged in active processes of enquiry and thought about an amount of content that can be studied in depth.

6.28 It is important also to emphasise that developing an understanding of the physical and natural world is not an activity limited to an area of the school curriculum labelled "science". The scientific approach to learning is one that can be encouraged in a wide range of curricular contexts and, in turn, scientific investigations draw on a wide range of skills and understanding developed in other curricular contexts. Obvious examples are mathematical and language skills which find a rich and meaningful context in scientific investigations. But such investigations and activity also contribute to the growth of social and interpersonal skills, attitudes to the environment and to each other, and the development of responsibility and independence in learners. Scientific enquiry provides a natural opportunity for the specialisms of many secondary departments such as mathematics, home economics, technical subjects, history and geography to come together in making a contribution to a more coherent learning experience.

Understanding and Using Mathematics

6.29 The position of mathematics as part of the school curriculum has been relatively unchallenged over the years. There is little doubt that understanding mathematics is an important part of understanding our world and, to most people, the ability to use mathematics is an important part of being able to operate effectively in the world. Yet, despite all of this, many adults find little application for the mathematics of their school-days in later life and question the relevance of the mathematics that they were taught. To claim to be 'no good' at mathematics in most adult contexts is to invite sympathy rather than derision.

6.30 The paradox of mathematics in the school curriculum is that, although mathematics has evolved and developed as a practical response to practical problems throughout the ages, in many schools it has become divorced from its practical roots. In both primary and secondary schools, mathematics has tended to occupy a distinctive and separate slot in the curriculum and timetable, its context in the real world and its links across the curriculum often obscured by the emphasis on the development of specialised, often abstract, skills.

6.31 The writers of *Primary Education in Scotland*[7] in 1965 saw mathematics as part of the primary pupil's study of the environment. While acknowledging the need for the development of specific skills it was emphasised that these skills were "...to handle quickly and efficiently the mathematical situations which will arise in the course of their activities"[8] rather than skills to be learned for their own sake. The most recent H M Inspectorate document on primary education[9] reaffirms the stance of the Memorandum on mathematics and, in line with subsequent policy statements[10], encourages a broad and contextualised view of mathematics which develops skills but which gains relevance and meaning from its links with the environment. In secondary education the Standard Grade Development Programme has stressed the importance of working with mathematical skills and concepts in ways related to and meaningful within the actual experience of pupils. It has shown how mathematical skills and understanding can be fostered by using them as a contribution to the solution of problems of a practical as well as a theoretical kind.

6.32 We believe that mathematical experience is an important component of the curriculum at 10 — 14, but emphasise the importance of regarding it as a useful and practical aspect of experience. We do not stress usefulness and practicality of mathematics in order to persuade readers that mathematics must be part of the 10 — 14 curriculum. There will be little argument about that. We do so because only a genuine commitment to mathematics for all as a necessary element for understanding and living in our environment will enable teachers to provide the right kind of learning experiences for children.

6.33 The Cockcroft Committee[11] also stressed use and practicality of mathematics. It emphasised, as well, the power of mathematics to create and communicate meaning. The use of tables, graphs, histograms in primary projects and investigations is common, and in secondary similar devices have become indispensable for presenting information in social studies and elsewhere. This means, of course, that mathematics is no more the exclusive province of mathematicians than English is the exclusive province of English specialists. Every teacher should be, when the need arises, a teacher of mathematics. Just as a primary teacher working on a topic in Environmental Studies will use whatever opportunities exist to develop mathematical skills and deepen mathematical understandings, so should secondary teachers even when their topic is science, technology or geography or business studies or art or design or whatever. Mathematics, we should be teaching, by practical and steady example, is for use.

6.34 But this is not to suggest that we see mathematics in the 10 — 14 curriculum as simply a form of 'social arithmetic' in which only the most basic mathematical processes are taught. We believe that the mathematics curriculum should be as wide and varied as the contexts in which mathematics are used. We believe that all pupils should experience a wide range of mathematical activities and that the opportunity should exist for those children who show particular flair or aptitude for mathematics to experience a challenge. And we also believe that learners should experience the 'magic' of mathematics for its own intrinsic pleasure.

6.35 We believe that mathematics can be enjoyable. Cockcroft[12] has produced evidence to show the important relationship that exists between mathematics in school and attitudes to mathematics in later life. Few pupils appear to have found mathematics enjoyable or even interesting and this must be a source of concern for all involved in the teaching of mathematics. Practicality and usefulness in later life depends for many pupils on finding some interest in the activity in the first place. It may be true that many negative attitudes towards mathematics can be linked to the heavy emphasis that has tended to fall on repetitive practice of skills and on 'pencil and paper' arithmetic. Many children find the way to mathematical understanding barred by the need to show mastery, through repeated examples, of routine calculation skills. Such barriers, we are convinced, need not exist in a society in which the electronic calculator and the micro-computer are increasingly common.

6.36 Recent research carried out in England and Wales in connection with the project *Mathematics 6 — 13*[13] has shown that as many as 74% of 10 year olds sampled have access to a calculator at home. The recent H M Inspectorate Survey of S1 and S2[14] however, has found that most schools ignore the existence of calculators until S3. We believe that schools in the latter half of the twentieth century should come to terms with the available technology and make constructive use of it as a resource for teaching and learning. The potential of the calculator in allowing pupils to see the mathematical ideas they are dealing with rather than the mechanical computational aspects is, we believe, so great that it is a matter of utmost importance that associated primary and secondary schools review the place of the calculator in developing pupils' mathematical understanding. Advice and guidance is available in the Cockcroft Report and in the publications of the Shell Centre for Mathematics[15]. We believe that education authorities have a significant role to play in providing guidance for schools on this matter.

6.37 The micro-computer is also an important new resource which is available for the teaching of mathematics. In mathematics, as in all curricular contexts, its potential is great but its value is often limited by the quality of the software available. The potential of the micro-computer in being a tireless purveyor of drill and practice items can be counter-productive and the computer can become an electronic text-book. Yet its potential in supporting broadly-based mathematical work is gradually being tapped by teachers and others involved in micro-computer developments all over the country. The micro-computer's capability in, for example, the production of bar graphs, histograms, pie-charts is of great value in the handling of data; its ability to handle mapping and related work in co-ordinates is well established; adventure gaming can involve children in problem-solving, often in a mathematical context; LOGO can be used in extending children's awareness of relationships and spatial geometry. Once again, effective and useful curricular discussion can take place between primary and secondary schools on the potential role of this resource across the curriculum.

6.38 The consequences of the foregoing for teacher groups who plan 10 — 14 courses for mathematical development are very considerable. Perhaps the first point to be made is that planning a satisfactory agreed syllabus over the 10 — 14 years is not nearly as straightforward as it sometimes appears. Because mathematics does have a logical structure it is too easy to fall into the trap of course planning by means of that structure alone. Courses should be determined by the pupils' capabilities and insights rather than solely by the adult mathematician's perceptions of logical structure. In addition, we offer the following guiding principles.

(i) The social/cultural dimension should be consciously and deliberately accounted for, in that the choice of contexts should reflect such concerns as authentic uses and effects of mathematics in the real world.

(ii) The logical relationships between new material and material already learned should be identified and, where feasible, made systematic.

(iii) The practical aspects of mathematics should dominate. In this, "practical" refers to aspects of mathematics which emerge as important from a consideration of the real world.

We believe that a very great deal of developmental work remains to be done in mathematics education at this stage in order to make it the effective, exciting and satisfying study that it has the potential to become for all children. We commend, therefore, the attention being jointly given to this matter by the Committee on Primary Education and the Scottish Central Committee on Mathematics.

Developing Practical Skills including Designing, Making, and Using Artefacts

6.39 Thought and action have developed together over the course of human history and we consider their marriage in pupils' experience to be a fundamental characteristic of a worthwhile education. In saying this we do not devalue intellect. If education is about anything, it must be about the development of mind. But mental activity grows out of concrete experience and it empowers action. Understanding is enriched by practical experience; practical skills are blind without understanding.

6.40 The integration of thought and action is, we believe, particularly important in the 10 — 14 period. This is the time when pupils are moving into increasing capacity for abstract thinking but it must not be divorced from concrete contexts and concerns. This is the period in which pupils can easily become disenchanted with second- hand accounts of academic discoveries which they cannot relate to the concrete world of their social and physical actions. In the 10 — 14 period schools can exercise a critically important influence on pupils' attitudes to knowledge and understanding as they relate to living. Pupils can begin to acquire what A N Whitehead called "the art of utilising knowledge"[16].

6.41 It is most important that the practical aspects of children's experience in school should not be seen as something especially appropriate for a hypothetical category of "non-academic" pupils. The principle in 6.39 about the value of the practical is, we believe, valid for *all* pupils.

6.42 The practical activities we have in mind involve making objects for utility and pleasure from a wide range of materials. The activities should include mending and maintaining as well as making and creating. They should bring pupils into contact with a variety of tools, instruments and appliances. Productions in food, fabric, wood, metal and plastics are included. Activities can range from making a spoon to preparing a meal; from changing a fuse to creating a simple electronic control system; from mending a tap to decorating a room; from making a window box to developing a garden or participating in a conservation project. All these examples involve skills. They all involve understanding. They can all offer satisfaction through tangible practical achievement. They can all help to develop a sense of the possibility of influencing the quality of living.

6.43 The quality of living is fundamentally determined by health. Healthy living is a very practical matter, and yet, here again, action and understanding go together. The study of human and physical sciences enlightens matters of nutrition, diet, hygiene and mental health. These in turn are linked with the quality of dwellings, food and attire, and with the quality of social relationships, entertainments and physical activities.

6.44 The practical activities to which we refer are not just matters of applying routine solutions. It is indeed important to be able to apply fairly mechanical techniques in many everyday activities, but, in a very fundamental sense, the practical activity we envisage is problem solving. We recommend that practical problem-solving experiences should be given generous allocations of time in the 10 — 14 stage. Pupils should learn to identify things which need to be done and which they perceive as worth doing. They should learn to assess constraints and investigate possibilities, to choose solutions and implement them. Also, they should learn to evaluate what they have produced, in terms both of utility and aesthetic effect, as well as the methods they used to produce it.

6.45 We have been impressed by the practical problem-solving approach in the *Scottish Technical Education Modules*[17], and we hope that this kind of approach can be developed and extended. Many aspects of domestic life, for example, confront human beings with problems which can be solved, provided one is confident in one's capacity to learn and to find and use resources of information and guidance. There is a whole range of important problems in providing healthy and attractive food within various constraints. Here, scientific understanding and practical skills can come together. Through appropriate experience, it is possible to learn to recognise and solve such problems.

6.46 Practical solutions to practical problems require skills, for example, in design and manufacture, in estimating and costing, in locating sources, approaching suppliers and recording expenditure. Pupils can acquire some measure of these skills. However, careful professional judgement should be applied when defining expected standards of achievement. Setting the standards too high can lead to much dreary practice of too few skills; setting standards too low can result in underachievement and can deny pupils the possibility of a sense of worthwhile achievement. Pupils can be brought to appreciate the value of skills. They can learn to evaluate their own work and they can become aware of the real possibility that it is within their ability to develop their practical skills and to acquire new skills in the future if they wish.

6.47 We are confident that pupils can learn effective ways of approaching practical problems and can develop confidence in their capacity to do practical things. Experience of tools and machines can overcome what we believe to be a sense of manipulative incompetence in many adults today. Achievement of some manipulative skills is important, but it may be that in this stage the growth of confidence in one's ability to learn to do practical things is even more valuable. In this connection, we suggest that learning to learn from sources of practical guidance such as may be found in DIY publications, books on cooking and instruction manuals is an important part of general education.

6.48 The marriage of understanding and practical activity which we are recommending is at the heart of the practical problem-solving form of activity which is called technology, and which has been characterised by the Committee on Technology as "doing and making to cope with real problems". Learning to think and act in a technological way, is an essential element in learning for living in contemporary society. Primary classes, where one person teaches much of the curriculum, offer numerous opportunities to bring together children's developing understanding and practical activity in response to problems in and about the school. Secondary schools with their tradition of separate subject teaching may find this more difficult. Nevertheless, we strongly recommend that every effort be made to relate all the aspects of pupils' developing experience to practical, creative and constructive problem-solving activity.

6.49 Every teacher, generalist or specialist, has a contribution to make to this aspect of pupils' experience. Obviously, teachers who have technical expertise and those who have skills and understanding in home economics have a very important part to play. We think it is most important that these specialists should co-operate very closely. However, many others must also be involved. The following are illustrative examples. A good deal of work in mathematics can arise out of practical needs, and mathematicians can contribute to pupils' solutions of practical problems in many ways. Teachers with expertise in physics can help children's understanding of mechanical and electrical principles. Chemistry and biology make very important contributions to nutrition and health. Art has a major involvement in design. Practical living is social living and those with special interests in social understanding have important contributions to make. Technology has major social implications and it introduces its own language of graphic communication. Any contemporary approach to practical problem-solving must include computer use. Particular reading, writing and computational skills are required in estimating and ordering materials, and here teachers with special skills in business could contribute to course planning or teaching.

6.50 The computer should be regarded as an essential tool in practical problem-solving activity. Not only does it open up a new world of information storage and retrieval, it also processes data with an ease which brings many real, as opposed to artificially simplified, problems into the scope of what pupils can do; it can be used in the evaluation of possible designs; it can record and communicate ideas; it can be used in the measurement and control of real events. The recent government initiative[18] has increased the availability of micro-computers in primary schools and children in the upper primary stages are increasingly likely to have had experience of computer use before transferring to secondary. We concur with the recent emphasis given by the Committee on Primary Education and the Scottish Council for Educational Technology[19, 20] to integration of micro-computers into the primary curriculum. Integration here means using the computers as tools to fulfil existing aims, rather than creating additional learning needs. We concur, too, with the level and nature of hardware provision recommended by SCET. A similar philosophy and practice should apply in S1 and S2, and again we believe that the SCET recommendations for provision are sound, as well as financially reasonable. The philosophy, practice and provision thus recommended — along with our own suggestion (5.35) for the provision of 'clinics' in the practical skills of computer use — will develop a high level of awareness of the nature and potential of information technology. Such computer use should be the main means of developing a familiarity with and awareness of the range of information technology which is, in our view, an essential component of general education in the 10 – 14 stage. This has implications for the provision of courses of computer awareness at S1/S2 such as those recommended by the MCC Project on behalf of the CCC[21]. The preliminary work done on *Computer Awareness in the Primary School*[22] provides a useful insight into the issues involved in developing computer awareness and, taken with existing guidelines for S1/S2, might form a practical starting point for discussion between associated primary and secondary schools. We strongly believe, however, that any development of computer awareness in the 10 — 14 stage should emphasise flexible processes, skills and understanding and should not turn into mere recall of information about computers. This whole area is one that will have to be kept under constant review by the primary – secondary co-ordinating teams. The availability of hardware and software, teachers' knowledge and skills, the awareness and expertise that learners themselves are developing earlier and earlier, are all in a state of rapid change. Computer applications and courses need to keep pace with this.

6.51 In this discussion of practical activity we have been concentrating particularly on activities intended to result in some kind of valuable artefact or pattern of practical behaviour. Such activities will of course mesh with the general active problem-solving pursuit of understanding which we believe should permeate much of the curriculum in all areas. We recommend that research, and development of appropriate methodologies, should be encouraged and that particular importance should be attached to learning to utilise knowledge and acquire practical and manipulative skills. We recommend that this aspect of pupils' experience should be given greater emphasis than hitherto.

Physical Development and Well-being

6.52 Of all the aspects of experience physical development may be the one most obvious to children. Throughout their lives they have seen themselves and their peers grow and change. Parents and other adults have commented on the changes and have contributed to the self-concept that each child develops as he/she grows towards adulthood. Physical development is therefore closely tied to physical and psychological well-being.

6.53 Schools can do a great deal to help children in their physical development just as they can in intellectual development. Physical education, in all its forms, enhances physical development, body awareness and good self concept in children. We strongly recommend, therefore, that physical education retains its place in the curriculum in S1 and S2. We further recommend that it should be available to all children in the later stages of the primary school. We are aware that there is a danger that it might suffer neglect and be treated as an optional extra. This should not be allowed to happen. Authorities should ensure that adequate provision is made in staffing, in staff training and in equipment and resources[23].

6.54 10 — 14 is a stage at which many children show an increasing interest in physical activities and abilities and in many cases an urge to compete. These interests can be sustained by individual and team games, gymnastics and swimming. The school, however, has a wider responsibility than to cater for the physically gifted pupils. Physical education is not restricted to the competitive. It can and should offer opportunities for all children to explore and develop their own capabilities and to find new interests, which may develop into talents. Physical education is also one of the ways through which children can find a means of expression by their own body movements and become aware of their own bodies in relation to the environment. This kind of expression and development is not confined to 'formal' physical education, but has links with music, with language and with drama through dance, inventive and expressive movements. These links are particularly important for children with physical and sensory handicaps who are, properly, being brought into mainstream education. Their participation has to be enjoyable and successful and able to be carried into leisure time. It should afford, through group experience, opportunities to develop psychologically and socially as well as physically.

6.55 The schools have much to offer in extending and deepening all children's awareness of the links between leisure, recreation and health. We have already emphasised the need for children to have experiences that are related to practical living and to the role that physical activity can have in healthy living. Increasingly, society is becoming aware of the need for positive action in term of health and that health and well-being is, to some extent, a matter of choice. Schools can play their part in helping children to become aware of the factors that underlie the choices that can be made. The Scottish Health Education Group has emphasised the influence of the "health promoting school" as a significant factor in influencing children in their actions. Such a school would not only give due attention to healthy living in the curriculum, but would, through the ethos of the school, show that the message of the curriculum has a foundation in a congruence with everyday life. The hidden curriculum can be particularly influential in areas such as healthy living and its messages can be more lasting in some cases than those of the formal curriculum. That is not to say that there should be no explicit attention paid to health issues in the school curriculum. Schools are, increasingly, expected to respond to the need to make children aware of the dangers of smoking, alcohol and drug abuse or to provide the opportunity to discuss issues of sex education. While many of these topics are of pressing concern it would be unfortunate if schools were to be placed in the position of crisis management. Issues of pressing social concern are also the concern of the school, but it is the school's duty to see that they are placed within a wider context, in this case, the context of health and well-being. Part, if not all, of education is the task of helping children to make sense of their world and it is to this end that issues such as these must be faced, but to isolate them and to turn a spotlight on them could possibly have a quite unintended effect. The wider context of healthy living is, therefore, the concern of all teachers in both primary and secondary schools and deserves careful consideration in terms of continuity and development. The informal curriculum of the school also has an important role to play in sustaining the development of well-being in children. Many schools, particularly at the secondary stages, offer a wide variety of leisure and recreational activities from sailing to orienteering which contribute both to the physical development of children and their awareness of the choices available to them for leisure activities. The link between such leisure choices and health choices is clear, and, in an age of increasing leisure, becomes an important focus for schools.

6.56 Within the context of consideration of physical development there are a number of features that require alertness and sensitivity on the part of all teachers.

6.57 The first is that all children do not pass through the stages of physical and emotional change at the same pace, in the same way, or to the same extent. Many girls, for example, will experience puberty while still in upper primary classess, but boys from the same class may remain relatively physically immature until they are well into their secondary career. The onset of puberty in boys can begin as early as 10, but it might be as late as 18 before full sexual maturity is achieved. Similarly, a spurt in growth may begin in boys as early as 10, but for most, the time of maximum growth in height is age 14, which means that some boys will remain relatively small, while others will show remarkable increases in size and strength. Variations of this kind in the pace of development do affect the way pupils think of themselves, and their confidence and effectiveness as learners can be affected. All teachers need to do everything to sustain that confidence. This acknowledgement of and provision for confidence, despite differences, is an essential element in the curriculum of pupils with physical, mental and sensory handicap. Increasingly, children with handicap are being brought into the mainstream where specifically *physical* education is concerned.

6.58 The second point of importance for all teachers is to be aware that social and environmental circumstances do have a significant effect on the physical development and well-being of children. Evidence from research studies[24] confirms that social circumstances, physical environment and the quality of family life can affect, for good or ill, the physical development of children. Those from disadvantaged backgrounds are likely to be smaller than average, more accident prone, more likely to have speech or hearing impediments and more likely to be absent from school because of illness. Teachers, at this stage, should be alert for such signs and should be prepared to draw the attention, usually through the guidance staff, of medical support services to children who seem to be suffering from adverse circumstances.

6.59 In Chapter III we have referred to the physical, emotional and psychological changes that take place over the 10 — 14 years and to the need for schools to be sensitive to and in tune with the development of children over this period. There is no gainsaying the impact that the sexual changes, in particular, are likely to have at this time in children's lives. The importance is not only in terms of the admission to the adult world that is taking place, but also in the influences that these changes have in the ways that young people have to review themselves and their relationships. It is important, therefore, that teachers across the 10 — 14 years recognise the difficulties that all children have, to some extent, in coming to terms with these relationships and see them in a wider context than simple knowledge of the physical changes that are taking place.

6.60 Schools in the 10 — 14 years have a role to play in providing a programme of sex education, but one which takes account of the wide range of areas that have to be visited. Physical aspects are important, but so too are personal relationships. Important decisions have to be made in such a programme about the timing, sequence and tone of the aspects dealt with.

Children have to be prepared for physical changes before they occur and certain topics e.g. menstruation are of importance to boys just as much as to girls. The development of a positive, but sensitive policy is a difficult task, but it is not impossible. The SHEG/COSPEN publication '*School Health Education, Sexuality and Mental Handicap*'[25], although directed at those concerned with educating young people with mental handicap, is commendable as a model for the development of policies and programmes in this area for all children (see Appendix B). We concur with the view expressed in that document that: 'Within schools, it is important that all members of staff, not only those likely to be actively involved, be consulted and made familiar with all aspects of the policy, which should then be reflected in the school curriculum. It is important for all members of staff to be clear about their own particular roles and be aware of those of their colleagues'.

Expressive and Appreciative Activity

6.61 This large and important area is one which hitherto has been all too vulnerable in the busy primary programme and — especially — in the crowded secondary timetable. Far too little scope, we feel, is given to pupils in the 10 — 14 age range to respond creatively to new experiences and to externalise their feelings in varieties of artistic expression. In this Report we have given prominence to the pressures and impressions crowding upon the young learner as she/he moves into an increasingly adult role. This concentration of influences, together with the spontaneity of response and the imaginative energy which characterise the age group, suggests a crucial place for activities which lead to making, presenting and performing.

6.62 We wish to make it clear, however, that we are not commending a vague kind of creativity which acknowledges no principles and serves no purpose other than a benign therapy. The creative experience in its many forms is an educative experience. Engagement, as creators or audience, with the expressive arts extends us, leaves us changed: afterwards we have new ways of approaching our existence, new appreciations of the human condition and the natural world. To capture feelings in words, to represent situations in forms or sounds, to assume another persona in performance (or to examine the results of others' attempts to do these things) is to be asked to concentrate the intellect, to sift our own experience of living and to make imaginative leaps in order to see new patterns, new relationships.

6.63 In existing specialist areas we welcome recent developments which take account of the need to offer pupils active participation, both as individuals and in ensemble. More children in the 10 — 14 age range are now making music and poetry, are planning and constructing artefacts in a variety of media and, notably in dance and gymnastics, are learning "the language of movement". But opportunities for this aspect of educational experience are by no means universally afforded to our pupils at this crucial stage of individual development, and we would strongly urge that much more positive effort be exerted in planning expressive and aesthetic occasions as essential features of educational provision.

6.64 For example, more has to be done in terms of visual education — the development of a discriminating eye in the study of the natural and the built environment. And in this age when the computer keyboard can make designers and orchestrators of the most cack-handed of us, we should take more advantage of the opportunities new technology presents for inventiveness and creativity in art, music, and craft and design. It is probably true that we still underestimate (and thus fail to adapt to good learning purposes) the degree of sophistication that our pupils 10 — 14 possess, nurtured as they are on the high technical standards of commercial art and music through the media. Indeed, this stage is likely to be the most fruitful for bringing to pupils' attention as topics of classroom consideration not only the technical achievements of the mass media, but the perspectives they force on readers, listeners and viewers.

6.65 One specialised form of creativity has suffered serious neglect in particular. Drama remains, inexcusably, the Cinderella of the expressive arts, barely acknowledged and sparsely provided for. Yet the potential of workshop drama for fostering personal, social and intellectual growth in the individual is immense. Consider the skills this kind of activity involves — language, movement, mime and "acting out" — and how closely these relate to the ways pre-adolescent children cope with their environment. Look, too, at the subject matter available — the topical, everyday reality of the young person's life; the methods used — group discussion, improvisation round a situation or problem; and the satisfactions gained — involvement to the full regardless of "talent", the opportunity to advance a personal point of view and to review it in the light of others' responses. No teacher who has worked beside a skilled drama specialist will deny the appeal of this kind of learning for all children. Yet despite manifest evidence of its educative power and despite its very modest cost, school managers continue to regard drama as a luxury item, and where it *is* timetabled it is immediately vulnerable in times of falling school rolls.

6.66 We appreciate that there can be difficulties in the recruitment and deployment of appropriate staff. Nonetheless we are very strongly of the opinion that a 10 — 14 curriculum which cannot at local planning level call upon the contribution of a specialist teacher of speech and drama is most seriously weakened.

6.67 It would be dangerous, however, if our Report gave the impression that the answer to years of only token recognition of the expressive arts is simply to make more *time* for drama, for music-making, and other creative activities. The *quality* of that activity is vitally important. It is, therefore, essential that teachers give attention to the processes involved. Investigation, observation, planning and design are elements of creativity, and all teachers must make time to allow pupils to engage in them. There are skills to be learnt here and good learning habits to be developed. And the 10 — 14 stage is the time, too, to develop a receptivity and a critical faculty. It is as important to be a discriminating consumer as it is to be an enthusiastic producer. Thus teachers, in structuring occasions when aesthetic experience is to be offered, should ensure that their curriculum provides time for discussion and comparison, for evaluation and criticism. Again, more than time is required: pupils will need the language with which to debate the relationship of form to content, of shape to purpose, of material to intended use.

6.68 Thus our definition of this aspect of experience extends its considerable learning potential into all other aspects. Expressive activity and aesthetic appreciation can be developed in and across all those areas of the curriculum which offer opportunities for reflection, designing, problem-solving, inventing and adapting — processes which, in the traditional aesthetic specialisms, are themselves receiving more attention.

6.69 To be more specific. If we accept that the exploration of the world of inner experience is an appropriate aspect of learning 10 — 14, it can hardly be approached without the stimulus of and the evidence from literature, art and song; and the growing awareness of self and others is often best and least inhibitedly demonstrated in children's writing, art work and improvisation in drama and dance studio. In opening up the issues involved in living together in the community, the value to understanding gained through improvised or simulated social situations and through the imaginative reconstruction of historical events can be considerable. Similarly, to deny the expressive factor in the course of bringing our pupils to a consideration of religious belief and ethical judgements would be perversely to ignore the fact that man has come to terms with this aspect of his experience and transmitted his reactions to a large extent through art, music and literature.

6.70 It should be said that we know that teachers working in the area of "humane studies" — languages, social subjects, religious education — often do conscientiously include expressive and appreciative assignments in the projects they design for their pupils. Our argument, however, is for an enhancement of this kind of learning provision, an enhancement which is planned in concert with colleagues in other curricular areas so that such learning strategies become firmly embedded in children's experience of the total curriculum. We could further suggest that this kind of learning has a place in the arrangements made for the study of scientific/environmental topics and in technological and mathematical applications. The reactions of our pupils to the revelation of the workings of natural laws and principles and to the power with which knowledge of this kind endows us are more likely at 10 — 14 to be characterised by fanciful speculation than by calculated intellectual acknowledgement. We would urge that such responses should be positively valued and deliberately planned for. Practical investigations should always end in discussion with good imaginative comment, informal or even artistic, being encouraged. The contribution of time spent to this end is highly beneficial to the relationship of learner and teacher and to the attitude of the learner to the object of his learning.

6.71 In sum, creative expression is instinctive in all of us and is the young person's most available means of responding to his/her world. If art represents the imposition of an order on inchoate impressions, the appeal of its forms for the 10 — 14 stage — the stage of both exploration and the search for order — is plain.

6.72 Equally clear is the obligation to ensure that our curriculum accords expression and appreciation their rightful — and prominent — places.

Communicating (1) — Understanding Language

6.73 The importance of focussing on communication as an aspect of experience — as distinct from the content that is communicated – is to help to develop an understanding that the medium of communication and how it is used creates and shapes meaning. As such understanding grows, the learners' control of the medium is enhanced : she/he can more effectively transmit and interpret a larger range of meanings. (We are well aware that many formally untutored language users, for instance, can communicate certain kinds of meaning with great impact and effect!).

6.74 The most important medium of communication in our culture is *language*; and the goal of language work in schools over the 10 — 14 age range is to develop, to the highest degree possible, competence in using language for learning and for living in society. We have stressed in Chapter V that language is best developed in the contexts where it is to be used and that consequently it is to be given attention in all areas of the curriculum and all teachers are responsible for language development. Effective communication is achieved by working at particular problems of communication — by asking, in fact, does *this* message (note, memo, minute, letter, diary, essay, explanation, report, argument, speech, story, poem, play) do the job it is intended to do, or could it be changed in some way in order to do the job better?

6.75 To a very considerable degree children at 10 — 14 can work fruitfully at that question with the operational knowledge of language which they already possess. They demonstrate this when, for example, they are engaged in groups writing a joint report, and will argue about points of vocabulary, grammar, spelling, punctuation, even style, without recourse to the elaborate technical vocabulary of linguistic analysis. Similarly when in a group they are establishing meaning *from* text, or from oral instruction, they will discuss and sort out different interpretations or identify the places where they experience difficulty.

6.76 In language work of this kind they will develop, however, more general understandings about language and how it works. The teacher's job is to help this process to occur and give it direction. "Language awareness" results from this process of interaction among pupil, teacher and contextualised, purposeful language task.

6.77 The language awareness which emerges from this process is of two related kinds: one has to do with language as system — how the symbols of language can be ordered to make meaning; the other has to do with language as a social phenomenon — how language works within society. Both areas, in the world of scholarship, have huge bodies of knowledge and theory, far more than can conceivably be incorporated in the 10 - 14 curriculum. The virtue, for the teacher, of working with the pupils' needs as language users is that these needs will define what it is useful for these pupils to *know* about language. The knowledge *about* language that is useful is that which enables language to be better used.

6.78 The key concept about language that has to be visited and revisited, discovered and rediscovered, noticed and demonstrated is a very simple one, but one with very complex and far-reaching ramifications. It is that it is possible to say the same thing in a variety of ways, and yet that the 'same thing' said differently rarely means precisely the same : the meaning changes in some way, however subtle. The fundamental importance of this idea is that, once grasped and operated on, the language user is in control of his language; s/he can see it as manageable, as something objective. Language, which for unsophisticated language users is transparent, becomes visible.

6.79 In terms of language as system this means that children can begin to gain control of vocabulary choice — some words carry the meaning better than others; gain control of variables within the sentence — some elements of sentence structuring are alterable, some are not; gain control of order and structuring of larger segments of meaning.

6.80 In terms of language as social phenomenon, they can learn of the importance of audience — how what is said or written needs to be modified to suit particular readers or listeners. They will learn the concept of appropriateness of language — the blending of the purposes of the user on the one hand and attitudes and expectations of the recipients on the other. They will learn how situation affects language and how social relationships affect language.

6.81 Further, and again arising from language use for authentic purposes, children will learn about the differences between spoken and written discourse, about dialect variations, about social attitudes to language variety, about language registers — variations socially and situationally determined.

6.82 Knowledge of this kind, growing from language in action, will help children to be better language users. It is significantly different from the information about language contained in older English or language arts textbooks still widely used in schools.

Communicating (2) — The Contribution of Foreign and Classical Languages

6.83 A very significant contribution to awareness of language as system is made by an encounter with a foreign language. To comprehend it and to use it, features of language, taken for granted and virtually invisible, have to be brought into conscious consideration. The developing and deepening of the understanding of how language works is the most general educational justification for making foreign language study part of the 10 — 14 curriculum. It is sometimes argued that quite specific "language awareness" courses should be used as a preparation for foreign language study. The process, we think, works best the other way around. "Language awareness" is a goal of foreign language teaching at this stage.

6.84 There is a subtler contribution to be made by specialists in languages other than English. It is an extension of language awareness which can be described as cultural awareness.

The perspective on life that is afforded by seeing it in terms of another language is different from that provided by a native language. It provides a grasp on the difficult idea that the language shapes beliefs and attitudes. A most important contribution is thus made by the teacher of languages other than English to multi-cultural and international awareness.

6.85 We recommend therefore that specialists in languages other than English should contribute to the planning and implementation of curriculum from 10 — 14. We do not recommend that languages other than English should be taught formally in primary schools with the object of producing competent speakers in a particular language. That contribution to curriculum, which is of a different nature and subserving different purposes from those here discussed, should begin in the secondary school. This is not the same thing as to say that we wish to exclude from the primary school all encounters with languages other than English. When such an encounter is clearly meaningful as part of a larger context which the children understand, and when, accordingly, they can see some study of the other language as purposeful, then this study is thoroughly to be encouraged. A meaningful context would be preparation to visit a foreign language speaking community, or preparation to receive visitors from abroad. It could be a study of, or sharing of, a minority culture within our own society.

6.86 In the encounter with *foreign languages in the secondary school*, awareness of and a growing understanding of the nature of language should be the prime purpose, and we believe that the widespread adoption of methods and materials based on activity and employing examples of authentic language in use is consistent with that goal as it is with the development of what we have called cultural awareness. The methods and materials we refer to are designed, in the first instance, however, to produce communicative competence in a foreign language — French being advanced in this regard. We give the other goals of linguistic and cultural awareness a higher priority, however. They are in line with our statement of desirable outcomes and are likely to produce a young person whose enthusiasm for linguistic adventure has not dimmed, and who is able to move his early experience willingly into more demanding areas of language learning in S3. These priorities make it possible to apply the same criteria to modern languages as to other elements seeking an entry into the 10 — 14 curriculum.

6.87 What we have said applies equally to classical languages. Gaelic is in a different position because it is a native language of Scotland and we discuss its position in Chapter VIII. The implications for the amount of time available for contact with languages other than English is also dealt with in Chapter VIII.

Communicating (3) — The Mass Media

6.88 The mass media, and particularly television, make up the most powerful influence — after, perhaps, the home and family — on the thoughts, beliefs and feelings of people living in our society. It is important that young people develop a sophisticated understanding of how the media work, how their messages are made, so that these messages can be appropriately read. A basis for that understanding is best created and developed over the ten to fourteen period by an approach which stresses active involvement in the making of media products of a wide range of kinds. Out of such activity can be developed an awareness of the opportunities and constraints which affect the making of media products. Such experience will demonstrate that media messages are not simple windows on the world but constructs influenced by many considerations, and that they have to be read in these terms. We prefer this style to an overly analytic or heavily information-loaded and didactic approach which can have the effect of turning children off an area of work which they see initially as exciting and motivating.

Communicating (4) — Graphical Awareness

6.89 The communication of ideas in a wide range of areas is best effected graphically, or by a combination of graphics and language. Opportunities should be afforded for learners to make judgements about the best ways to communicate and to learn appropriate skills. Along with the Committee on Technology[26] we believe that the skills are best developed in the contexts in which they are used. These skills include the following:

(a) prepare freehand, dimensioned sketches, working drawings, charts as appropriate to the particular communication task

(b) read, understand and interpret sketches, charts and working drawings

(c) appreciate the value of appropriate graphics in the design process

(d) use accepted conventions and symbols in technical graphics.

Religious Awareness and Moral Development

(a) Religious awareness

6.90 The human search for meaning and purpose has a very long history and it has always gone beyond the immediately tangible in experience and reached out towards some kind of infinite and ultimate relationship. In the words of the Munn Report "... pupils may be expected at least to take account of this tradition and of the central questions with which it is concerned, when making their own appraisal of the human condition"[27].

6.91 We view religion as a fundamental form of experience which must be available in the curriculum for all children. For some pupils and their parents, descriptive experience of varieties of belief and practice, and some discussion of their effects in human life, may be sufficient in school. Others will wish schools to provide opportunities for a fuller experience through particular faiths and practices. Clearly these are matters for school managements and parents. Many will see particular links between moral education and religious education. Some will regard these as necessary links, some will regard them as contingent. Certainly, in our view it is desirable that all pupils should have opportunities to develop and increase their understanding of the religious dimension in human experience.

(b) Moral Development

6.92 Young people's moral experience takes on new meaning over the 10 – 14 years. Moral development moves from dependence on adult authority towards the conventions of the peer group and towards autonomous judgement. It is a time when old certainties are no longer secure and life can look increasingly ambiguous. Pupils' experience of questions about what they ought to do becomes more significant as the range of alternative actions one can take becomes greater. And today new possibilities are emerging from science and technology at an unprecedented rate. Birth control, organ transplant and genetic engineering are obvious examples. Humanity, as never before, has power to manipulate the social and the physical environment, even to destroy them. If the moral problems of today are difficult, responses to the unforeseeable dilemmas of the future are even more problematic. They are moral problems. They are not just matters of expediency or prudence, they are matters of right and wrong and good and bad. Caught in the tide of social change, some despair of finding good reasons for one action rather than another while others proclaim the truth of their own views to the point of violent conflict with all who disagree. A world of new possibilities for good and ill, a world of tension, unfairness and uncertainty: this is the setting of the adolescent moral experience. And, as the Munn Report asked, "... schools are expected to provide pupils with an effective moral as well as social education, but how is that expectation to be fulfilled when society itself, on a whole range of moral and social issues, is so deeply divided?"[28]

6.93 Despite the difficulties and uncertainties schools have a responsibility to provide experiences which will nurture moral development. Pupils should be encouraged to discuss moral issues appropriate to their age and stage of development, to offer relevant reasons in support of what they judge to be right and to attend to reasons offered by others. Pupils should have experiences which can help them become sensitive to other people's beliefs, attitudes and feelings and which can help them to obtain a better understanding of their own. They should have practice in looking for and taking account of relevant facts, for example the likely effects of pursuing one course of action rather than another. But moral judgement and sensitivity are empty if they are not expressed in action. In and out of school there are numerous opportunities for pupils to practise what they believe to be right, and schools should look for ways of involving pupils in programmes in which concern for humanity can find expression.

6.94 There is considerable support for the view that moral education should permeate the curriculum. Some however argue that it is too important to be left at that and they advocate special moral education programmes. Many hold that the proper centre for moral learning is religious education on the grounds that ultimate principles upon which morality depends are religious. School managements must reach their own decisions on these matters. We believe that moral education should permeate much of the curriculum, and, whatever pattern of special provision is adopted, we would reiterate that all teachers should attend to the hidden as well as the overt aspects of their curriculum.

6.95 Development of respect for self and others and exploration of problems of interpersonal relations are closely linked to social development and social education. Every part of the curriculum where pupils work together provides a context and opportunity for moral experience. Learning resources have to be shared fairly, personal needs and interests have to be balanced against those of others, and behaviour has to be regulated so as not to impede the freedom of others to learn. The study of literature, of history and of the social and physical environment brings numerous moral problems and possibilities to attention: exploration of their worlds of inner experience is relevant to their growing understanding of themselves as persons who cannot escape personal responsibility for their actions. Moral experience should not be seen only as observation of an aspect of human affairs. If it is to be meaningful in pupils' lives and consciousness, moral experience must involve them personally in issues which are real to them. It should include some degree of participation in school government and, progressively over the years, it should include increasing responsibility for their own behaviour. It is valuable to learn to obey rules and respect properly constituted authority, but to spend the years of school experience only following or avoiding the dictates of others without any participation in the making and evaluation of rules is a poor preparation for personal responsibility and autonomy.

CHOICE

6.96 If the desirable outcomes are to be achieved, opportunities for pupils to choose, to make decisions about their learning, and to engage in self-evaluation of the results of their decisions, will be very important. We concur with the emphasis which the Pack Report[29] put on the concept of "opting in". On the other hand we hold that Education 10 — 14 is a stage in which breadth of educational foundation is important and we cannot accept the possibility of pupils "opting out" of any major elements in the main dimensions of the curriculum which we have described above.

6.97 Pupil choice should therefore be exercised within areas of the 10 — 14 curriculum. Indeed there should be occasions when it is possible for some groups, or individuals, within a class, or larger learning group, to follow different aspects of a topic in depth, though, wherever possible, results of such different activities should be reported back, made available to everyone, or integrated into a whole group product. There should also be extensive opportunities for pupils to participate in decisions about *how* things will be learned. There will be times, for example, when the same task can be approached by reading, by listening or by experimenting, and in such circumstances it can be very valuable to involve pupils in discussion of the best method or combination of methods to pursue. We firmly believe that the objective of learning to be self-reliant in learning can only be achieved if there are opportunities to practise and engage in self-evaluation.

SUMMARY

We identify nine aspects of experience which should gain balanced attention in every pupil's curriculum at 10 to 14. These are: Understanding the Self — the World of Inner Experience; Living Together in a Community and in Society; Understanding the Physical and Natural World through Science; Understanding and Using Mathematics; Developing Practical Skills including Designing, Making and Using Artefacts; Physical Development and Well-being; Expressive and Appreciative Activities; Communicating; Religious Awareness and Moral Development. We do not propose a nine-subject structure of the curriculum. Instead, each teacher should contribute expertise to several aspects of experience, as appropriate to the associated schools' view of their curriculum. Education at 10 — 14 must provide a broad foundation for all, and we do not accept that any pupil should opt out of any aspect of experience. Instead of choosing *between* aspects of the curriculum, every learner should make choices *within* each aspect.

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CHAPTER VII

ESSENTIAL CONDITIONS

7.1 We now summarise our discussion up to this point in a statement of the conditions we see as essential in a ten-to-fourteen curriculum. In addition we point forward to some implications we shall take up in later chapters.

The central focus of attention in planning the curriculum should be the individual learner interacting with his environment

7.2 This focus is based upon our view of the learner as being active in the process of making meaning, and in developing control of his world through interaction with and reflecting upon her or his own experience. Curriculum should therefore provide a widening range of experiences, selected to enable children to grow in understanding of the human situation, and to operate effectively and ethically in the world.

Curriculum 10 — 14 should be common to all and shared equally with every learner

7.3 The full range of experiences in the curriculum should be available to all children. Schools should avoid providing only a limited range of experiences of a practical kind for some children; equally they should avoid providing only a limited range of experience of an academic kind for other children. Boys and girls should have the same range of curriculum. Schools, when diagnosing the problems of learning that all children will at some time encounter, should not use irrelevant assumptions based on gender differences. Girls should be discouraged from developing negative views of themselves and their capabilities in relation to technology, science and mathematics. Some positive discrimination may here be necessary.

Curriculum should be wide ranging and balanced

7.4 Curriculum should offer experiences for the growth of understanding and the development of capacity in all nine aspects of experience set out in Chapter VI. In this way children will encounter key ideas and important concepts in the main areas of human understanding and will develop skill in practical activities for living. By "balanced" we mean that no area of experience will be ignored at the expense of others, or treated as more important than others.

Curriculum should be coherent, continuous and should encourage progression

7.5 By coherence we mean two things. First, children should be aware of harmonious and supportive relationships among elements of the curriculum. For example, skill with number work and other mathematical concepts, skill in the appropriate use of language, should be developed in accord with recognised and consistent policies. Second, we mean that children should be aware of the coherent relationship between what they learn at school and their everyday life outside school.

7.6 By continuity we mean that there should be a recognition by teachers of what experience has gone before and a conscious building upon that experience.

7.7 By progression we mean two things. First, the experiences that children have in any curriculum area should provide for increasing skill and understanding both by introducing new concepts and activities, and by revisiting concepts and activities in varied contexts and applications. Second, we mean that the understandings and skills which pupils are developing should become gradually differentiated in their minds into the distinguishable disciplines which make up the post-14 curriculum.

The whole curriculum should encourage independent learning

7.8 The ability to learn independently of the teacher (or of teacher-surrogates in the form of highly detailed and invariable work sequences) should be nurtured from the earliest stages of schooling and especially from 10 onwards.

The whole curriculum should encourage co-operative learning

7.9 The development of learning skills should take place in collaborating groups with a common and shared purpose, as frequently as it does individually. Groups should learn the value of interdependence to achieve learning outcomes, and should be helped to develop the skills of purposeful collaboration.

The whole curriculum should promote problem-solving skills

7.10 Every area of the curriculum should be reviewed with the intention of identifying opportunities for children to engage in problem- solving activities. Problem-solving is a human activity almost as widespread and socially necessary, both for survival and the advancement of understanding, as language activity. It is a kind of activity much underrepresented in the school experience of most children within the age range.

The whole curriculum should enable children to offer reasons, hear reasons, develop reasons, respect reasons and critically examine reasons

7.11 At a time when "knowledge" changes with great rapidity, knowing answers to questions is probably less important than the ability to think through to an answer and to evaluate the reasoning behind an answer.

The whole curriculum 10 — 14 should provide opportunities to develop access skills for information finding (this includes computer use for information retrieval)

7.12 Problem-solving, critical/rational activity of mind, collaborating with others to achieve an outcome, learning independently, all generate the need to locate and use information.

Resources, including computerised databases, should be available to answer these needs and children helped to use these resources effectively.

The whole curriculum should provide opportunities for children to develop their communication skills

7.13 This means that attention must be paid across the curriculum to the comprehension of spoken and written materials in the context of their use; and to the making of appropriate messages in speech or writing to communicate findings and ideas. It does not mean sentence completion tasks. It also means the developing of communication skills in media other than language, particularly in graphic communication — but again not simply the ability to copy diagrams.

Every opportunity should be taken to encourage children to reflect upon their own learning strategies, and to develop and use a wide range of appropriate strategies

7.14 This is best done in the context of real learning activities by discussing with children how each tackles a learning task so that they can acquire ideas from each other. The teacher should "model" learning strategies s/he thinks appropriate, and should demonstrate her/his own learning techniques wherever possible, and always in the context of a real learning situation. "Study skills" courses, abstracted from such situations, are likely to work only when they draw together and sum up ideas already tried out "for real".

The whole curriculum should be designed to encourage decision-making and choice

7.15 Because we see it as essential that all children should have access to the whole range of curriculum, opportunities for decision-making and choosing have to be available *within* each of the areas of the curriculum, not between them.

The child's experience of the curriculum should be congruent with the values and attitudes that the school seeks to promote

7.16 The most important element in the social education of children is how they are treated and how they are encouraged to behave by the school as a social institution. For this reason the implications of school organisation must be kept under review. Similarly teachers should monitor their own attitudes and assumptions lest the messages they communicate encourage undesirable outcomes.

CHAPTER VIII

WAYS AND MEANS

8.1 Up to this point we have proposed principles and conditions upon which the learning of our 10 — 14 year olds may be designed. We turn now to consider the structures of the curriculum themselves.

8.2 The designing of such structures is, we have suggested in Chapter IV "Working Together", a matter of reviewing what structures are already in existence and, by a gradual process, strengthening them as desirable, modifying them as appropriate, and introducing new elements where necessary in order to achieve the outcomes we seek. We are not proposing the establishment of totally new structures because totally new curricular structures are, we believe, unnecessary as starting points for review.

8.3 On the other hand we have up to this point deliberately avoided discussing curriculum in the familiar terms and categories which currently are used to give structure to the learning experiences of 10 — 14 year olds (except, of course, by way of illustration and reference).

8.4 We had two related purposes for proceeding in this fashion. First we wanted to provide a rationale for review — ways of focussing questions such as, 'Are we, through our present programme in environmental studies, or our syllabus in science, contributing as effectively as possible to desirable educational outcomes?' Second, we wanted to provide a language which would enable teachers with different backgrounds and training for primary schools, special schools, secondary schools and those in secondary with different specialisms to review their contribution to the learning experience of pupils in terms of continuity over the years, and coherence across the curriculum. Our aspiration is to replace curricular apartheid with togetherness.

8.5 We believe further that the review and consequential changes have to be undertaken by teachers themselves and, with, of course, all the help that can be afforded them by support structures within schools, education authorities and at national level.

8.6 This is not always a popular position to take. Experience of this style of development has varied. From some viewpoints it can look like a requirement to undertake a heavy additional workload. From others, it may appear a slow and inefficient process and a much more centrally directed model is preferred.

8.7 We take the firm view that, with all its problems, the school-based, externally supported model is, in the long run, the process which can be made to work most effectively. Teachers (and the same is true of professionals in many other walks of life) are most likely to accept and act upon new ideas or emphases if they are allowed to, encouraged to and enabled to think through the needs, the ways and the means for themselves. Teachers should be on the inside of curriculum development from the start if maximum effect is to be achieved. In recent Scottish experience, a promising example of this approach was the establishment in "first line pilot" schools of significant innovatory courses in English, mathematics and science at Standard Grade Foundation Level. The extension into a second group of subjects developed the practicability of the concept. A third school-based, externally supported development of great significance was the range of "short courses" constructed in the main for young school leavers, sometimes breaking new curricular ground, and often involving inter-departmental collaboration in secondary schools as well as links with the community and sometimes further education.[1] Yet another recent development is of particular significance, and considered in a recent study[2]. That is the development of new multidisciplinary courses for S3 and S4: Contemporary Social Subjects; Health Studies; and Social and Vocational Skills. The findings of this study are not unencouraging, and tend to support the view that the more intimately involved the teachers were in all stages of development, the more likely the chances of successful outcomes.

8.8 We recognise the difficulties in this model. They lie in achieving a balance between the need for external support and guidance (and even direction) on the one hand, and teacher involvement (even control) on the other. Although a difficult balance to achieve, we retain complete faith in a style of development of which our system now has a broad range of valuable experience.

8.9 It is true that the application of this model for promoting development is particularly difficult in the 10 — 14 age range. Development can not be focussed on one school, or even less if it is a secondary school, on one department. For this reason we devote a chapter of our Report — "Partnership for Progress" — to the structures which we believe will enable classroom teachers themselves to take a leading role in introducing appropriate change. The essence of this is that there be set up a curriculum co-ordinating committee for each group of associated schools, which will identify a set of priorities and establish working parties to engage in the necessary development. Each co-ordinating committee will be responsible through the head teachers involved to the regional/divisional education authority.

8.10 There is one further, and, if it were needed, decisive reason for our advocating this model for development. Development must start from where a particular school or group of schools actually is in relation to the general principles and desirable outcomes which, in the light of our earlier chapters, it is felt right to adopt. 'Where a school actually is' includes — indeed, is a powerful influence upon — what individual teachers think and believe, and, consequently, how they behave and affect their pupils.

8.11 The starting points will vary. The possibilities will be different. Some schools will have gone further than others towards the outcomes we have indicated.

8.12 All this inevitably means that what follows in this chapter on curriculum structure must itself be a review of possibilities in the light of three considerations:

(1) our own view of the principles upon which Education 10 — 14 and its desirable outcomes should be based; and how in terms of educational experience and activities to achieve them;

(ii) the fact that schools can be very different from each other in their present structures, and that they will, therefore, have different starting points for change;

(iii) our view that the process of change may legitimately arrive at different outcomes, there being no single best curricular structure applicable in all circumstances.

THE BASIS FOR CURRICULAR REVIEW

8.13 We introduce our suggestions for review with the reminder that structures themselves are 'ways and means' — not ends. They subserve learning and teaching purposes and are to be justified only if they do that effectively. What matters most is the quality of the learning experience of the pupils within the structures adopted.

Established Custom

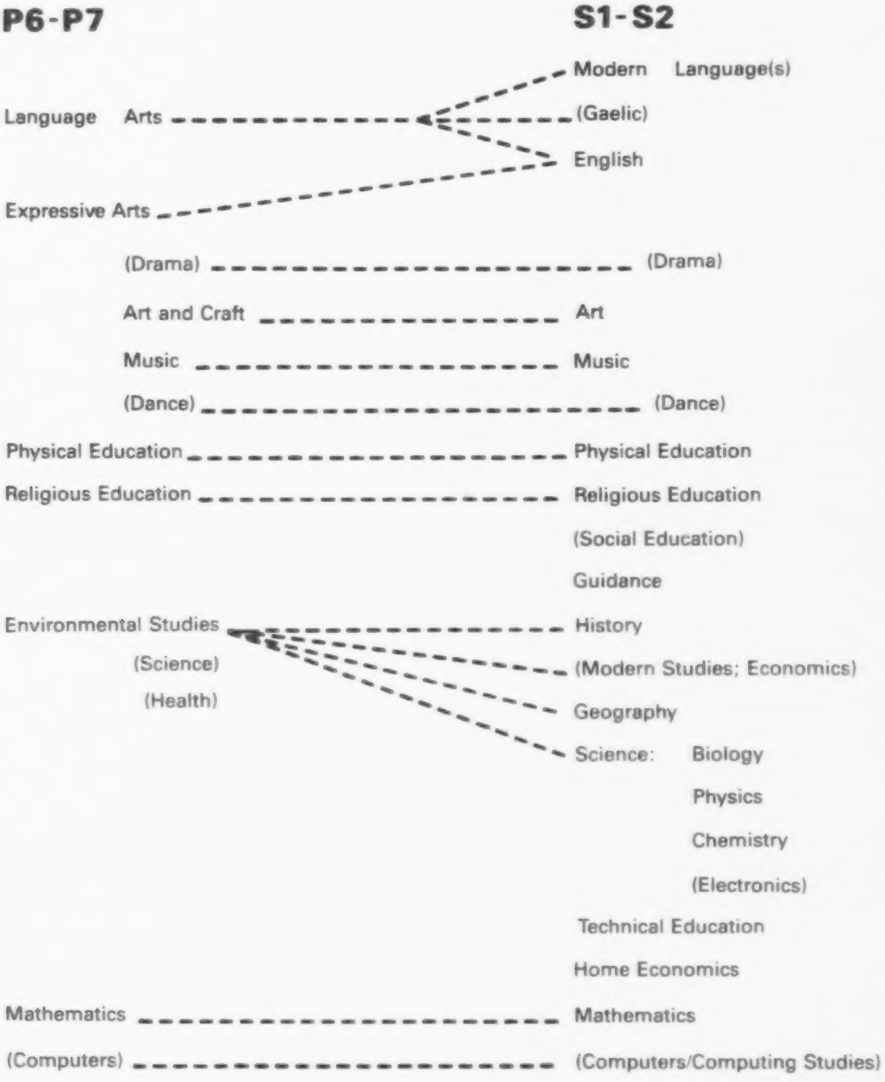
8.14 A useful starting point for review is a model of what we have come to think of as 'old' or 'established' custom over the 10 — 14 stage.

8.15 The curriculum in the majority of primary schools is organised under the broad headings of language arts, environmental studies, aspects of expressive arts, mathematics, and religious education. In secondary schools, two recent surveys[3 4] have confirmed that 'established custom' is to organise the curriculum in a timetabled arrangement of twelve subjects : English, mathematics, science, a modern language, history, geography, home economics, technical subjects, art, music, physical education and religious education (sometimes associated with a formal programme of social education). Virtually every secondary school, however, will have additional timetabled slots, used in varying ways. These slots are filled by such subjects as classical studies, modern studies, drama, computing and a second language. This characteristic of the secondary school to cope with what it sees as desirable or necessary extension to the range of curriculum by carving out time and space and adding extra subjects, may be regarded as a feature of 'established custom'.

8.16 'Established custom' we set out in a Table at Figure 2. This gives an indication of most of the well-recognised curricular links between the sectors, where there are clear possibilities for developing continuity and progression. Through these links and to some extent in the order we have chosen for setting out the S1/S2 subjects, an indication is given of some of the relationships among these subjects, where lie some of the more obvious possibilities for developing a greater coherence.

FIGURE 2

THE DESCRIPTIVE CATEGORIES OF "ESTABLISHED CUSTOM" IN THE 10 – 14 CURRICULUM


P6-P7
S1-S2
Modern Language(s)
Language Arts
(Gaelic)
English
Expressive Arts
(Drama)
(Drama)
Art and Craft
Art
Music
Music
(Dance)
(Dance)
Physical Education
Physical Education
Religious Education
Religious Education
(Social Education)
Guidance
Environmental Studies
History
(Science)
(Modern Studies; Economics)
(Health)
Geography
Science: Biology
Physics
Chemistry
(Electronics)
Technical Education
Home Economics
Mathematics
Mathematics
(Computers)
(Computers/Computing Studies)

NOTE: Curricular elements in brackets ( ) are, for one reason or another, insecurely and/or not universally established. Elements offset to the right are often regarded as an aspect of a larger category. Dotted lines show the more obvious links that exist between the sectors.

8.17 What is most apparent, however, from Figure 2 is the contrasting ways in which the two sectors have extended 'established custom' to provide curricular breadth : on the one hand by a process of synthesis and integration; on the other by analysis, differentiation and aggregation. There are strengths characteristic of both approaches. The differentiated approach means that the identified elements of the curriculum are actually covered. The associated danger of this, however, is lack of coherence, fragmentation and rigidity. The synthesising approach may achieve coherence and flexibility, but important aspects of experience may be neglected. There are widespread suspicions among secondary teachers that the integrative approach lacks intellectual rigour, while primary teachers fear that the secondary approach takes insufficient account of the child as a learner. The power of a review of curriculum undertaken by teachers themselves in a group of associated schools is to enable each sector to recognise and make use of the positive experience of the other. We are aware, of course, that the degree to which there can be differentiation on the one hand and synthesis on the other is not entirely a matter of ideology or free choice. The flexibility of organisation which underpins primary curriculum is not so easily achieved in the secondary. Our point at this stage, however, is that change will not be achieved or effectively implemented unless there is a will. That will is dependent upon sympathy for and understanding of the potential of alternative organisation.

8.18 In using Figure 2 as a starting point for a cross-sector curricular review it is necessary to recognise a significant difference between the two columns. The list of secondary subjects is not simply a set of descriptive categories: it is the way that the curriculum is actually organised. The categories of the primary school curriculum, on the other hand, are a basis for *planning* the curricular experience of pupils : it is quite unlikely that the varied activities of a P6 or P7 pupil could all be accurately and sharply differentiated in terms of these categories. A single act of writing, for example, may well be in the intention of the teacher, a contribution to language arts, expressive arts and environmental studies.

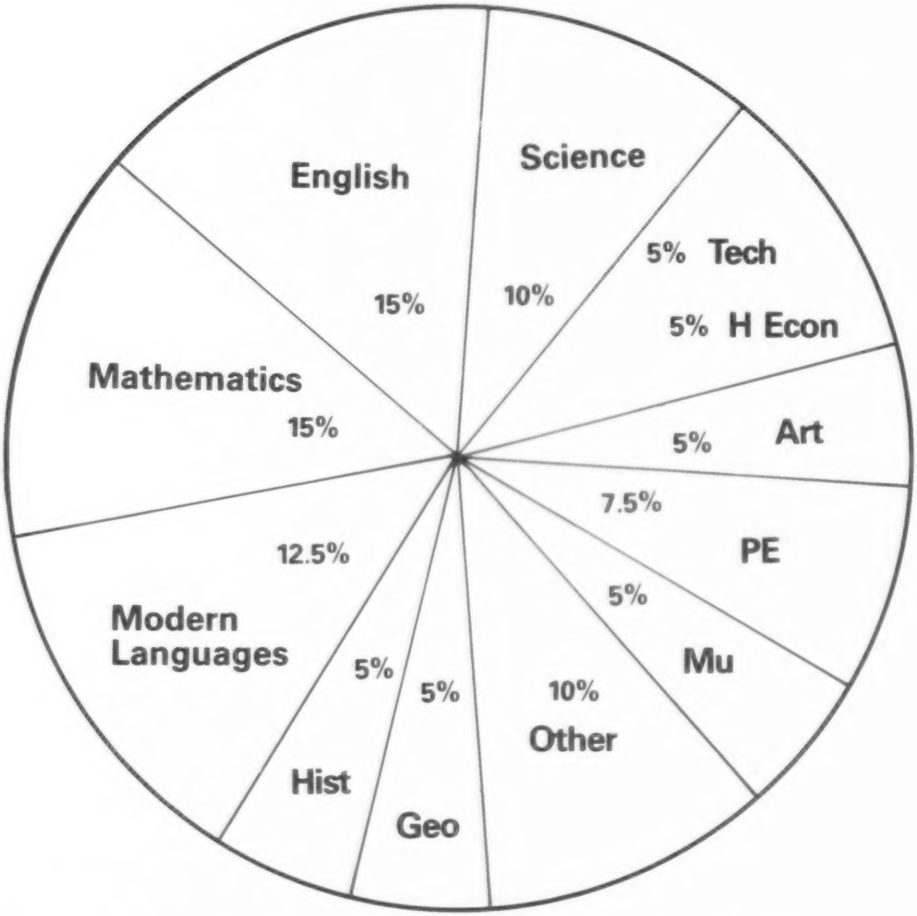
8.19 The power of the review we recommend in terms of our aspects of experience (Chapter VI), is to identify and so make explicit and communicable the learning experiences of pupils. This is as necessary for communication between primary schools as it is between the sectors.

Time and 'Established Custom'

8.20 In Figure 2, there is no indication of what 'established custom' is in regard to the distribution of time in either sector. We have, in fact, no precise data upon which to generalise about the primary sector. More precise data is available about secondary use of time simply because time is allocated to particular subjects. The H M Inspectors Survey of fifty-five schools[4] is at pains to stress the degree to which there are large variations between schools and also points out that a 'subject' in one school may cover a different curricular area from the same subject in another — so that "mathematics", for instance, may or may not include computer studies; "English" may or may not include library time, or drama, or media study. With such reservations, it does offer the following picture:

Figure 3

Time Distribution in 'Established Custom' in S1 and S2



(Source: Scottish Education Department (1986) *Learning and Teaching in the First Two years of the Scottish Secondary School* HMSO.)

8.21 What is immediately striking from the presentation in Figure 3 is the very large amount of time taken up by mathematics, English and the modern language (the H M Inspectorate Report makes clear that only one modern language is included in this account).Given that variations exist*, it appears that in some schools almost half of the timetable is taken up by these three subjects.

8.22 We do not take the view that every one of the nine aspects of experience should all be given equal time. We do, however, think that 'established custom' as here represented, in giving such a proportion of time to language and mathematics, is seriously out of balance. The curricular imbalance becomes even greater in the second year of secondary when an additional language (classical or modern) is offered to some pupils. Time is found usually from such areas as technical education, home economics and physical education. Given the principles which we have argued, we cannot justify this practice.

Pressures on the Curriculum and 'Established Custom'

8.23 We have already noted that the 'traditional' way in secondary schools to deal with extensions to the curriculum is to create new 'subjects'. This works adequately when curriculum is designed on a core-and-option basis. New subjects can always be brought in as options. Thus, in S3 and S4, it is possible to accommodate, for example, Social and Vocational Skills, Contemporary Social Studies and Health Studies. That procedure is excluded from our 10 — 14 curriculum because, within the range of the curriculum as we have described it, we require all aspects to be available to all pupils.

8.24 There is an acute problem here. Among the "subjects" which can argue a legitimate case for securing inclusion in the 10 — 14 curriculum are the following (they are not all new; some belong to an even older custom, and some already appear in Figure 2 in the 'insecure or not universal' category):

modern studies (in S1)
economics
money management
consumer education
aspects of business studies (especially keyboarding)
computer awareness/use/study
electronics
health studies
drama
media studies
education for a multicultural society and international understanding
equal opportunity education
technology
classical studies
Scottish studies
Celtic studies

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*The Report states (para 2.15) ".... time allocations to English and mathematics varied between 10% and 17.5% each; allocations to the modern language ......were fairly stable".

We have given legitimacy, as it were, to virtually all of these claimants in the course of our argument in Chapter VI on the range of the curriculum. But to recognise and commend their desirability is quite a different thing from finding a place for them in a learner's experience of the four years of schooling 10 — 14. And we have legitimated several of them in terms of aspects of experience, or as permeating skills, rather than as separate subjects.

8.25 To the list should be added Gaelic, which we have already suggested (in para 6.87) cannot be regarded in quite the same light as other non-English languages traditionally available to Scottish pupils. It is a native language of Scotland and represents an important part of the historical culture. We commend, therefore, the bilingual teaching policy in those areas where it has taken place, and commend the continuing study of the language and culture in S1 and S2 in those areas of the country where this is the will of the community. Whether that will exists has to be the judgement of the local authorities.

8.26 That judgement will not be easy to make, but equally difficult judgements face authorities in those areas where significant numbers of pupils come from homes where the language spoken has been recently introduced by immigration. If it is judged — and this is essentially a political judgement — that the school system should provide for the sustenance and study of the languages of 'new citizens', then time has to be found in the curriculum for this activity.

Strategies for Structural Change

8.27 The foregoing discussion should make it clear that the strategy of simple addition will not cope with all the pressures on the curriculum. It will be clear too, that the responses at P6 and P7 are likely to be different from those at S1 and S2, if only because of the greater flexibility of organisation possible in the present primary situation. It is for this reason that we proceed to deal separately with the two sectors. Even as we do that, we remind readers that curricular review must be conducted within the framework of a concept of education 10 — 14, and must respect:

(a) The aims and desirable outcomes;

(b) active learning to develop skills, capacities and attitudes

(c) breadth of experience over the range of aspects;

(d) balance of provision (not the same as equal time);

(e) progression;

(f) common experience for all including choice within, but not between major aspects;

(g) gradual differentiation in children's understanding ("different kinds of questions have different kinds of answers").

THE PRIMARY SECTOR

8.28 The structural characteristics of primary education as we have described them in 'established custom' have recently been endorsed by the Committee on Primary Education. Two further features of primary education are there endorsed and commended. First, a growing number of schools attempt to make extensive use of the local environment as a context for learning, and embed the mathematical, scientific, historical, expressive and other activities in these contexts. Second, schools strive to ensure that much language development takes place in the investigation of and response to the contexts for learning that exist within and between curricular areas.

8.29 Major national development programmes undertaken (in the face of great difficulties) from 1984 onwards (the Primary Education Development Programme and the Scottish Development Programme in Expressive Arts), seek to sustain and support these trends.

8.30 Primary practice such as this is entirely consistent with the achievement of the desirable outcomes that we have proposed as being appropriate to the 10 — 14 age range through permeating features and the nine aspects of experience that we have identified in Chapters V and VI. It is the task of primary schools to engage in a review of the extent to which existing policies and practices make it possible for the learners at the P6 and P7 stages to gain access to the range of aspects of experience, and to make progress towards the desirable outcomes.

8.31 In going beyond the single primary school to the associated primaries and secondary, we recognise that one barrier to the development of effective primary-secondary curricular continuity has been the range of ways in which the curriculum has been organised in practice. One of the sources of difference is the extent to which provision is based upon explicit structure.

8.32 Few primary schools control the pupils' activities by means of a fixed timetable and few, if any, are at the other extreme in which pupils' activities are governed solely by their interests and concerns. We believe structure in the curriculum to be necessary; its function is to facilitate structure in the pupils' understanding. But rigid boundaries between areas of pupil activity tend to result in fragmented experience. We believe that the coherence of learning should be an important guiding principle in the structuring of learning activities and schools should be aware that a loss of coherence can result from too much structure just as it can be the result of too little.

8.33 It is through the school's policies and the teachers' programmes that the necessary balance between structure and flexibility can be found. It is the translation of the school's policies into practice that leads the learners towards the achievement of the desirable outcomes.

8.34 It is on this basis, in school policies and classroom practice, that the internal review of the curriculum and learning activities both within schools and among schools can take place allowing them to evaluate the extent to which the existing curricular provision contributes to the development of appropriate 10 — 14 curricula. In suggesting this we do not intend to imply that the development of 10 — 14 curricula, through the process of curriculum liaison, requires as a pre-requisite the adoption of a standard primary curriculum across associated primary schools. We accept that there will be diversity in primary curricula, but suggest that all primary practice should reflect a number of principles found in our descriptions of the climate for learning and the aspects of experience. We believe that the primary curriculum should have breadth through the attention given to the nine aspects over the primary years and, progressively, through to the secondary years. However, we concur with COPE who, in *Primary Education in the Eighties*, have pointed out that balance in the primary context is wider than the balance of attention to curricular areas.

8.35 "For one thing, the broad areas of Language Arts, Environmental Studies and Expressive Arts are all deeply interfused with one another. The concepts and skills are often shared in common and derivable as readily from one area as from another"[5].

8.36 We believe, therefore, that primary schools should continue to strive towards practices which emphasise the inter-relatedness of learning; in which much of the learning of language and mathematics is done in describing, exploring and communicating about the real world; in which aesthetic insights and practical skills receive extensive attention in a variety of contexts and in which children learn through observing, questioning, testing, talking, reading, listening, writing, making and creating.

8.37 It would be unrealistic not to recognise that there are problems in working towards the desirable outcomes in these ways. But many schools have already made significant moves in this direction and the review of policy and practice in a 10 — 14 context will, we believe, continue the momentum.

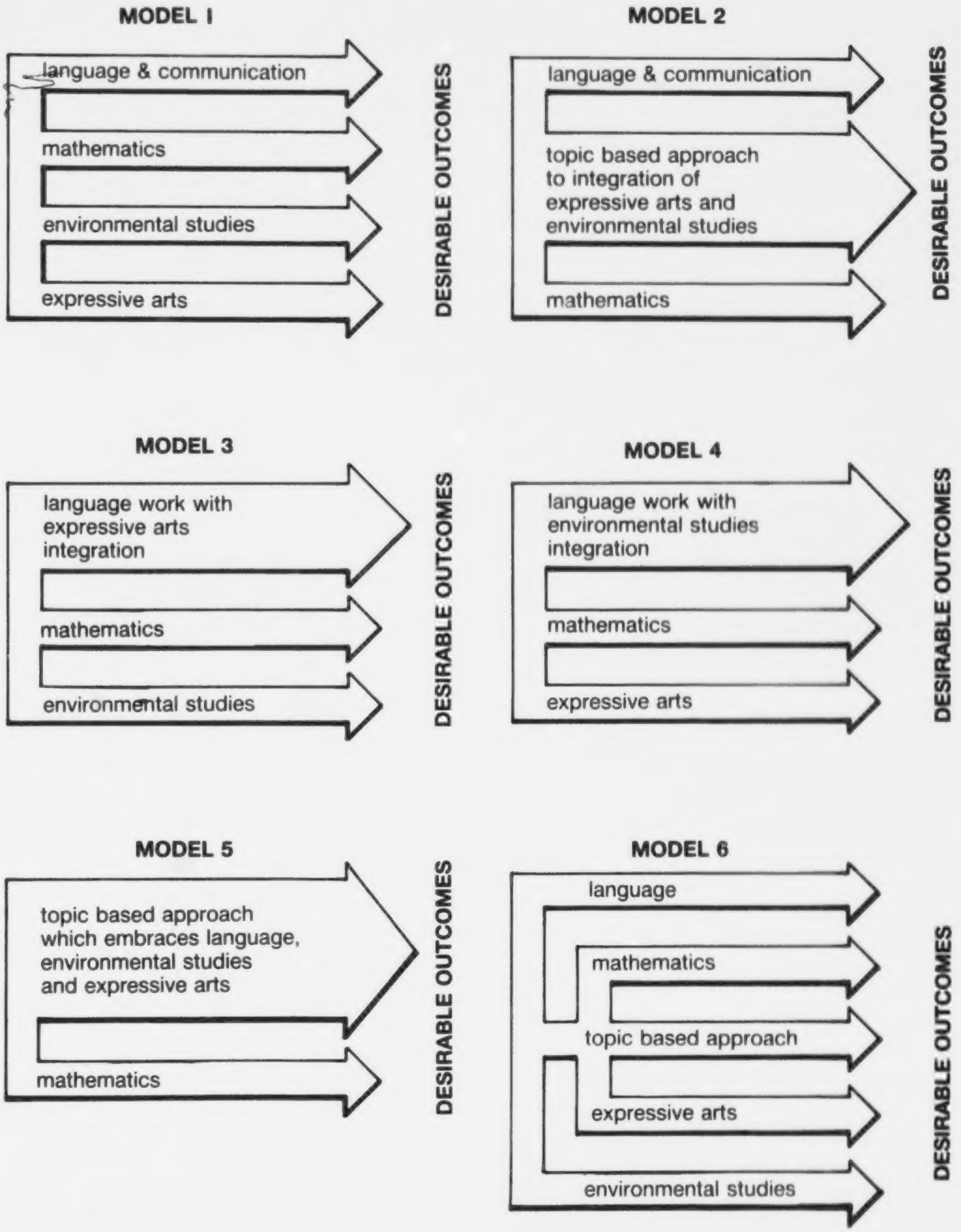
8.38 The following simple models[6] shown on Figure 4, opposite, might be used to represent the range of ways in which the primary curriculum is organised and provide a basis for discussion among associated schools when discussing curriculum liaison. All of these models could satisfy the basic principles of balance and breadth and all, to a greater or lesser extent, would emphasise the interrelatedness of experience. All of the models could lead towards the desirable outcomes and, given an appropriate methodology, would provide the context for the development of a range of access skills.

8.39 The major function of such models, however, is the stimulus they provide for thinking about the curriculum and the questions that they raise. As an individual school or a group of schools begin to discuss the curriculum a number of issues are likely to arise. For example:

"In what ways does our approach to the curriculum resemble/differ from these models?"

"Is our curriculum always like one of these models or does it change for different purposes?"

Figure 4 Models of the Primary Curriculum


MODEL 1
language & communication
mathematics
environmental studies
expressive arts
DESIRABLE OUTCOMES
MODEL 2
language & communication
topic based approach to integration of expressive arts and environmental studies
mathematics
DESIRABLE OUTCOMES
MODEL 3
language work with expressive arts integration
mathematics
environmental studies
DESIRABLE OUTCOMES
MODEL 4
language work with environmental studies integration
mathematics
expressive arts
DESIRABLE OUTCOMES
MODEL 5
topic based approach which embraces language, environmental studies and expressive arts
mathematics
DESIRABLE OUTCOMES
MODEL 6
language
mathematics
topic based approach
expressive arts
environmental studies
DESIRABLE OUTCOMES

Or at a more specific level:

"Where does the development of scientific understanding fit in to these models?; "Does it require a separate arrow?"

"Why does mathematics have a separate arrow in five of the models?"

"Does expressive arts always contain all of the areas of music, PE, art and drama for all children?"

It is through the discussion of questions such as these that communication and understanding about the curriculum can take place.

8.40 Topic work, such as that indicated in models 5 and 6, can, we believe, provide a particularly fruitful way of working towards the desirable outcomes. Some topics can be very general and require a focus and purpose so that they do not simply become vehicles for the accumulation of unrelated facts. Exploratory discussion and preliminary reading can allow teachers and pupils to focus on a number of specific questions about the topic that are worth investigating. If we take 'Transport' as an example then questions might arise which range from 'big' issues such as "Why is 'transport' such an important feature of modern life?"; "Why are bypasses built around so many small villages and towns?"; "What are the effects of building a bypass on a small town?" through to more specific questions which may help to find answers to the bigger questions: e.g., "What kinds of vehicles pass the school gate at various times of the day?"; "How does the local supermarket get its supplies?" and so on. Investigations can be carried out; tentative answers can be compared with historical and contemporary information and arguments; social aspects of the topic can emerge; geographical concepts can be involved; problems about materials and energy can be investigated through scientific processes; mathematics will be required in a range of ways; there will be extensive discussion, written recording and oral presentation of results of investigations; a variety of concepts and skills will be developed.

8.41 Topics may, on the other hand, focus on specific aspects of the environment and may draw on specific aspects of experience. Children may, for example, visit a castle and collect a wide range of data about that castle both from written sources and from observations made as part of the visit. They will record in writing, in photographs, in drawing; they may measure heights of walls using mathematical techniques, thickness of walls, position, shape and number of windows and much more. Back in school that firsthand information combined with maps, pictures and other reference material can provide the basis for a range of approaches to the study of the castle as a means of defence against weapons in use at the time of building; the development of weapons to deal with castles as defensive structures; as a geographical location; as a way of living together; as a study of materials; as a stimulus for imaginative and expressive response. Pupils can learn to question why things were done the way they were and they can explore the problems which confronted castle builders and the possible solutions to these problems. Other topics may be devoted to a study of a local field, pond or stream; still others may find their stimulus and sources in children's books.

8.42 Some topics, then, have more specific points of focus than others, but the more specific topics should not exclude the possibility of developing worthwhile activities in other aspects of experience should such possibilities appear in the course of pupils' interested enquiry. The topic on a castle has a strong historical component; but this should not exclude other ways of understanding. For example, pupils may become interested in the design of an arch, or the causes of eroded stonework, or the problem of retaining the water level in a moat. The important message in all of this is that such topics, general or specific, are developed because they provide meaningful contexts for learning for the pupils and because they allow the school to provide a progression of concept and skill development across the aspects of experience. Children will develop important access skills in the location and use of information, and will become increasingly aware of the ways in which knowledge is classified and formed and concepts such as geography, science, history, health, art will become meaningful as children relate the work of, for example, historians to their own investigations.

8.43 We are in no doubt about the power, rigour and validity of a topic-based organisation of curriculum. It offers children experience in enquiry, in using evidence, and in problem-solving. It leads them to recognise that different kinds of questions have different kinds of answers — and that is the basis for understanding the notion of and differences between the academic disciplines which they will later encounter. It is an approach which may seem to create a mismatch between Primary 7 and Secondary 1 where twelve or more separate subjects are usually encountered. The fact that different primary schools study different topics may also seem to be a cause for concern. But an analysis of the children's learning experience in terms of the concepts encountered and the skills developed *within* their topic studies can overcome this kind of difficulty. What we think would be a damaging step would be the introduction of separate subject-based courses in the primary schools.To say this is in no way to undervalue the contribution of such initiatives as the Primary Science Development Programme, which in fact is very broadly based, rooted in children's experience and seeks to promote ways of thinking and learning which have very wide applications in helping children to understand themselves and their environment. If there is any cause for concern over topic studies, it is not the principle that is culpable but its implementation.

8.44 It is, therefore, very important that the development of skills, understanding, and attitudes should not be left to chance. Schools should articulate policies for the systematic development of these through a wide range of activities. Teachers in parallel and successive classes should, we recommend, work within an agreed broad framework of intentions and priorities. Such a framework should be clear enough to provide progression over the primary years and on through the secondary stage. But it should be a flexible guide: it should allow for individual differences in rates of progression; it should not restrict teachers' freedom to respond to individual needs; it should allow for considerable teacher autonomy in choice of content and design of learning activities through which pupils will achieve the agreed broad pattern of skills,

8.45 Effective curriculum continuity can take place between primary schools and their associated secondary based on school policies which provide a guide to learning experiences appropriate to the desirable outcomes. Part of this process in planning must involve the development of shared understanding that comes through both intervisitation and the exploitation of opportunities for teachers from secondary and primary to make a teaching contribution in each other's classrooms.

8.46 The development of the 10 — 14 curriculum provides a context within which primary schools can review and develop their policies and practices in consultation with each other and with their secondary partners. We recommend that:

P6 and P7 be regarded as part of a continuum of experience which starts at the preschool stage and goes on into the secondary school;

a range of structural possibilities for the curriculum should be regarded as acceptable, provided that they facilitate movement towards the desirable outcomes through the aspects of experience and permeating activities;

partner schools should work towards agreed policies on their main intentions, in terms of understanding, skills, and attitudes;

the curriculum should not be designed in terms of subjects, but learning experiences should help pupils to become gradually aware of the ways in which knowledge and understanding are classified.

THE SECONDARY SECTOR

8.47 The Distribution of Time

Curriculum structure in the secondary school is inevitably involved with the timetable and we shall, therefore, offer some general guidelines on the allocation of time. Two preliminary points are worth mentioning however: it is impossible for us to go beyond general guidelines because the factors influencing the detail of timetabling are beyond our scope to deal with and vary so greatly from school to school; and secondly time can be distributed in ways other than through an invariable weekly timetable — and indeed, many secondary schools offer subjects in rotation with other subjects, a practice which, within limits, we commend.

8.48 We find it useful as a general framework that time be thought of in three categories.

8.49 First, a small, but regular and inviolate, time, which we shall call tutorial or home base time when each class (or, if possible, as it has proved in some cases, half-class) should meet with a tutor or base teacher, ideally each day. We argue this case in Chapter XI.

8.50 Second, a larger segment of time which we shall call flexible time. We see this time as being usable in a variety of ways depending upon the needs of the school and the individuals, staff and students, who make it up. For instance, we have committed ourselves to the view that the curriculum should be common and shared by all. Uses of flexible time might include private study, referred or self-referred special instruction (in, for example, keyboarding skills or spelling or number work, if those have not been as highly developed as possible in the primary school experience); other forms of directed or self-chosen study; clubs and other leisure activity; or, in certain circumstances, additional language work. Flexible time should be limited to about 8% of the total learning time. (Probably two hours in a 25 period week; 3 or 4 periods in a 40 period week to be determined by the school). It is important that this time should not be used merely for options, for remedial work, or additional subject applications.

8.51 The remainder, most of the time available, is what we shall call standard school time. How it is distributed will, to a significant extent, determine the range and balance that can be achieved in the curriculum.

8.52 The basis upon which time is distributed in 'established custom' is to award each subject a number of periods per week. This practice depends in turn on accepting that the 'subject' is the best basis upon which to organise children's learning. We have surely provided enough argument in this Report to indicate that we understand very well how this concept is challengeable, and recognise the logic of working from our own statement of desirable outcomes, through the permeating activities across a full range of experience to an entirely fresh set of ways of structuring the curriculum.

8.53 To do so, however, would be to go counter to the principle of gradual change we have adopted, and to go counter to the principle of starting from where you are.

8.54 We rest content, therefore, as a starting point, with the subject labels and divisions with which schools are familiar in 'established custom'.

8.55 We have chosen, however, to group the individual subjects in certain instances, together. In one case, the sciences, this is already part of 'established custom'; in a second case, the social subjects (history, geography, and modern studies) it is 'established custom' to refer to them by this term, while both the theory and practice of collaboration between them has developed greatly over recent years.

8.56 The third grouping is more unusual. We place in the same category for guidance on time allocation, all the language subjects — modern, classical, Gaelic for native speakers and learners, English and community languages. For this grouping of subjects we shall propose a generous allocation of time, but yet an allocation with limits.

Reweighting of English and Modern Languages

8.57 We do this in order to achieve two purposes which are not, on the evidence of the H M Inspectors' survey, easily reconciled: to ensure that all learners share the whole curriculum and develop in all of the nine aspects of experience; and to attain the goals of languages teaching, English and other, as we have described them at various points in Chapters V and VI.

8.58 We believe it necessary to *limit* the time allocated to language subjects in order to ensure that no learners are deprived of the opportunity to benefit from other areas of the curriculum — especially technological, practical, aesthetic and physical activity. That deprivation has occurred too often in the past, and has helped to give credence to the charge that secondary schooling was failing to equip young learners with the skills for life in contemporary society. It has also given plausibility to the simplistic and profoundly damaging notion that the curriculum is divisible into academic (high-prestige) and non-academic (low-prestige) subjects.

8.59 In proposing a given time allocation for work in language that can contribute to the desirable outcomes, we do not, of course, suggest that there can be some undifferentiated course in 'language'. Acquiring a language other than one's first language is a very special, and difficult, attainment. Our own cultural circumstances, in which many 10 — 14 year olds do not readily perceive an immediate value in a second language adds to the difficulty. (In this they differ from their peers in most other European nations where the acquisition of English as a second language is seen as a key opening doors to a highly-valued international, mainly American, teen-age culture based in pop and rock music — a perception which matches well with the more conventionally recognised economic usefulness of English as a second language). Our 'language time' has to be broken down in the traditional manner among the languages being experienced.

8.60 We believe, however, that the combined time for language work — in effect for English and a modern language — should and could be less than the mean time in established custom as revealed by the Inspectorate survey. '*Should be less*' for reasons we have already suggested: other areas of the curriculum are, at present, inhibited in making a full and proper contribution to pupils' experience. '*Could be less*' for reasons we now explore.

8.61 First, a simple fact. There are already schools which allocate less time than the national mean time to English and a modern language without any reported ill effect upon their pupils. One case, at least, offers twenty per cent of 'standard time' equally shared by these subjects.

8.62 Second, a new situation. English teaching and modern languages teaching have come much closer to each other in methods and goals in recent years. Both have adopted the use of language in authentic and/or realistic situations as central to their methods. There is a face validity, at least, in the proposition that, given common goals and methods, the subjects should be able to make their contributions more economically in time, and more effectively by co-operation than they generally do at present.

8.63 Third, there are contributions to language development and to competence in communication derivable from activities outside the specifically 'language' subjects. The firm establishment of drama in the 10 — 14 curriculum will help. The potential contribution that drama can make to language development is well attested to in the Young Report[7] whose recommendations lie largely unimplemented. Additionally, and arguably of even greater importance, is the establishment throughout the curriculum of teaching and learning styles that enable learners to develop their communicative powers in the varied contexts of use and in the variety of ways of thinking that school experience offers.

8.64 Fourthly, there is, in current developments a real possibility of more effective monitoring of the development of language skills than we have ever had before. One way is by better testing procedures[8]. Another way, within schools, exists in the deployment of learning-support specialists as companion teachers and as consultants. Through them there is a potential not only for sharing expertise, but also for an informal, but effective, monitoring of the language skills of pupils as used over a variety of subjects.

8.65 There is every reason to hope that with appropriate professional development, the need to maintain the quality of language use, certainly within the native tongue, can be reconciled with the need to contain formal language work within bounds less generous than presently found in many secondary schools. We should be prepared to extend these bounds in S1 only to accomodate provision for the Gaelic language, which as we have noted is a very special case. Where there is a will to provide Gaelic as well as experience of a continental European language, then it seems proper first to adjust the relative times *within* the allocation for languages, and second to use some of the time we have designated flexible time at 8.50.

8.66 The feasibility of these proposals is dependent upon the ability of teachers of language to capitalise upon what they have in common. This is an area in crying need of development. There is in practice little experience of meaningful collaboration between teachers of English and teachers of other languages, and indeed, remarkably little accessible theoretical work upon which collaboration could be based. It is noteworthy that the Bullock Report, *A Language for Life* — which, though published as long ago as 1975, still remains a guiding influence — contains no reference at all to the role of modern languages; while its comments on the languages of 'Children from Families of Overseas Origin' are concerned mainly with teaching English as a second language. Since that time there has been valuable work begun by the National Congress on Languages in Education[24], but much remains to be done. Within the CCC's work in Scotland, a study has been undertaken on languages other than English, and we encourage these developments.

8.67 We are further aware that 'language across the curriculum' is far from being a reality: that, for instance, outside English Departments there is little use of extended and continuous reading and little development of extended and continuous writing — both quite essential learning skills. Here is another area to which attention must be given at school level and with appropriate support.

8.68 These, however, are reasons for caution, not for inaction, and do not affect the principle of our proposals which we make quite firmly as strategic goals to which we should begin to move. Such a move involving the allocation of additional time to subject areas other than English would have to be accompanied by the undertaking of appropriate styles of teaching to promote language development.

Reweighting of Mathematics

8.69 We take a very similar position with regard to the time allocated in established custom to the specialist teaching of mathematics. We believe that this time could and will have to be reduced in many secondary schools. This proposal depends upon establishing a co-ordinated approach to mathematics throughout the curriculum, and it is based upon the proposition that skills are best developed within a context of authentic use. Specialist teachers of science, technical education, home economics and the social subjects will have to be prepared to undertake the appropriate application, and where necessary, the teaching of mathematical skills in context. As with language, the development of mathematical skills should be monitored. There is an important role here for a co-ordinator of mathematical activity, who should be a member of the co-ordinating team as we later describe it. (12.16).

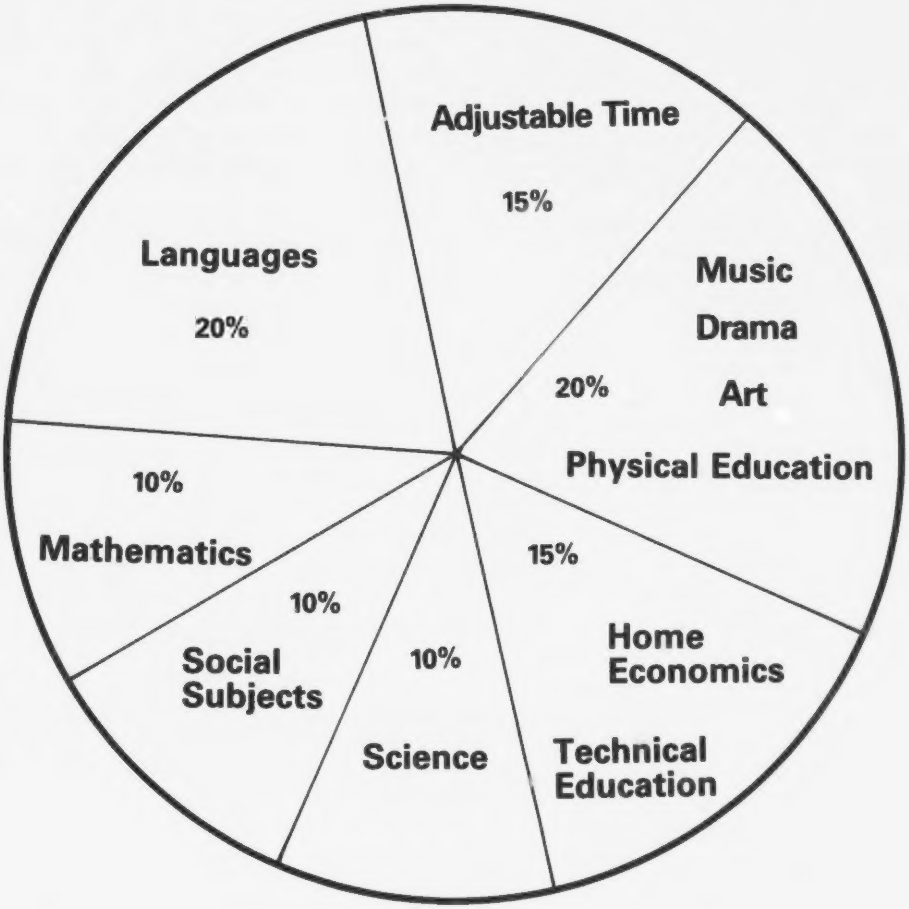
8.70 Again we are fully aware that 'mathematics across the curriculum' is, according to H M Inspectorate evidence, hardly even at the embryonic stage. Again, we recognise that this affects the mode and timing of the proposals we make, but not the principle. Again we would require the evolution of a co-ordinated policy for applying and developing mathematical skills across the curriculum. Again we make our recommendation firmly as a strategic goal.

The Curriculum rebalanced

8.71 We propose therefore that, by the process which we go on to describe, schools should move to a curricular balance of the kind set out at Figure 5. The distribution of time is presented in the form of a pie-chart to make comparison easy with the presentation at Fig.3 from the H M Inspectorate survey. The category, Languages, is intended to allow for flexible provision within the time of 20% to allow for English and a modern language. Schools should decide within their own circumstances how that time should itself be distributed. The block of time of 15% which we have left undifferentiated is meant to provide for 'flexible time' as we have defined it in para. 8.50 and also for religious education, aspects of social education and very importantly for tutorial/base teacher time as we describe it in our chapter on 'Pupil Care'. It is recognised that there are different ways of relating these three categories which are quite consistent with our principles of curricular balance and pastoral care.

Figure 5

Towards a Balanced S1 – S2 Curriculum



8.72 We reiterate that we do not recommend that every school should *immediately* adopt this time distribution for the reasons we have explored. Nor do we regard these precise allocations as sacrosanct or invariable. Nor do we argue that the categorisation of subjects is unchangeable. Nor are we suggesting that these weightings appear in *weekly* timetables. But in these relative weightings and in terms of categories of learning experience with which all schools are familiar and which most schools employ, there are embodied certain principles to which we do attach the highest importance.

8.73 The desirable outcomes and the balanced provision of a range of experiences lay considerable emphasis upon the inner experience of pupils, the importance of expressive and appreciative activities. There is also a promotion of the idea of pupils developing a critical eye and skilled hand. The weightings we propose are intended to encourage these features. They are meant, as well, to counter the impression given by 'established custom' that activities characteristic of art, technical education, home economics, music and drama are but peripheral.

TOWARDS RESTRUCTURING THE CURRICULUM

8.74 We are not, it should be plain, recommending that school managements should restructure the learning experiences of pupils by the simple device of altering time provision as a first step (though we know this to have been done in a small number of newly opened schools, in which, of course, there was no institutional 'established custom'). We propose a different starting point: namely a careful and close evaluation of actual practice and provision in both S1 and S2. This evaluation should be conducted under two main headings: (1) the quality of learning, and (2) range and balance of curriculum. The first of those will give rise, interalia, to a consideration of (a) the amount of syllabus content; (b) support for learners having difficulties, and (c) for language in learning; the second will include consideration of ways to introduce new areas within the time available.Guiding the whole process of review should be a firm sense of direction — to achieve as far as possible the desirable outcomes listed in Chapter III.

Evaluation 1 — The Quality of Learning

8.75 As the basis for this aspect of evaluation, we recommend the use of the ideas we have set out in Chapter V of this Report.These ideas will give rise to questions which all teachers, whatever their subject, can pose to themselves about their own practice and consequently about the learning experiences of their pupils. Among the questions that teachers might ask themselves are the following:

> Do I try to find out and take account of what pupils already think, feel and know/or can do about the matter I want to teach? (Paras 5.4 - 5.9).

Do I link the matter I seek to teach as effectively as possible with the existing patterns of understanding that the learners already possess? (Para 5.8). Can I learn to do this more effectively from colleagues in the same and other curricular areas?

Do I encourage learning to take place through the learners' use, for their own purposes, of a wide spectrum of communication modes — talking through ideas with peers as well as with me; reading for supplementary information or another way of putting things; making jottings and drawings purely to make meanings clearer to themselves; offering more formal accounts and explanations in talk and writing, but still in their own terms? (Paras 5.15 - 5.21).

Do I attend with full seriousness to their accounts and explanations so that I (or others in the class or group) can, if need be, challenge them, help them to re-consider, extend and refine them? (Para 5.21).

Do I set tasks to be tackled co-operatively by learners working together? (Paras 5.24–5.27).

Do I encourage and support learners to work out for themselves plans to achieve particular goals? (Paras 5.28 – 5.29).

Do I encourage and support learners in the use of information sources? (Paras 5.33 – 5.35).

Do I discuss with pupils (and encourage them to discuss) their approaches to learning tasks? Do I show them my own range of ways of learning — of developing, deepening and fixing in memory my own understandings? (Paras 5.36 – 5.38).

Do I present tasks as often as possible in the form of open-ended problems? Do I discuss outcomes in the recognition that the *process* of engaging in the task, practical or intellectual (or both in combination) is as important as the product? (Paras 5.40 – 5.45)

8.76 A list of questions of this kind focussing on the learning experiences of pupils can be extended by reference to our chapter on Learning, Teaching and Assessment.

8.77 Such a review by individuals of their own teaching practice may seem a remote starting place for a consideration of curriculum structure. It is not. The quality of the learning experience is the most important consideration in the education of pupils at this stage. Without a consideration of quality, structures — however clearly designed to satisfy abstract considerations of epistemological range or societal needs — are empty. It is a further truth, borne in upon us by some of our observations in the field, that collaborative work between departments, which is a structural feature of the curriculum in an increasing number of schools, is based, very frequently, on subject content with little consideration being given to the processes of learning.

(a) Syllabus Content

8.78 The review will, moreover, raise questions about course content and the availability of time for teaching and learning. Time is limited. It is an unavoidable constraint. Content, on the other hand, is virtually limitless. Its amount has to be consciously controlled. That control has to be exercised in the light of the quality of the learning. If necessary, we should reduce course content for the sake of quality of experience. We should be prepared *to do more with less*. We should not answer 'There's no time for looking up reference books — there's a syllabus to get through'; we should consider reducing syllabus content.

(b) Pupils Experiencing Learning Difficulties

8.79 A review of this kind will also raise questions about supporting pupils who are experiencing learning difficulties. While many learning difficulties will be reduced by affording more time and attention to the process of learning itself, there will remain problems in which the class teacher will benefit from the expertise and advice of consultants and companion teachers who have specialist insight into the nature of learning. We commend the initiative of Strathclyde Region (first set out in its *Report on the First Two Years of Secondary Education*[9]) in adopting a policy of timetabling to provide support teaching of this kind and note their view that to "ensure that co-operative teaching on the basis of 4 teachers to 3 classes can be employed across the curricular range in S1 alone, we estimate that, on average, an *additional* 2 teachers per secondary school will be required above the level permitted by the Red Book"[10].

(c) Language for Learning

8.80 Support for learners experiencing difficulty involves a consideration of language use in the classroom. A policy for 'language learning' — one which has grown out of teachers' perception of the needs of their own pupils; which is based upon their own review of learning and teaching in their own classrooms; and which is founded on the notion that language and understanding are indissolubly linked — has a higher chance of success in helping learners than some of the attempts in the past to introduce 'language across the curriculum' policies whose relevance for their own work many teachers did not recognise.

Evaluation 2 — The Range and Balance of the Curriculum

8.81 The basis for this part of the evaluation process should be, we suggest, the range of aspects of experience set out and described in Chapter VI. The 'new' curricular areas at para 8.24 should also be held in mind. Further, it is necessary to know, to build upon and to extend the range of experience pupils have had in primary school.

8.82 There is immediately apparent a difference between this aspect of evaluation and the first. Whereas in evaluating the quality of learning, teachers individually or in groups within the same subject area can operate on their own, in evaluating curricular range and balance, there is a clear need for some body or group to overview the learners' experiences across the whole curriculum and through all four years 10–14. Only from such a vantage point can a proper evaluation take place.

8.83 The functions of such a body cannot, of course, be restricted to evaluation. It must be empowered to make recommendations for action when action is perceived to be needed. We describe the make-up of this body in 'Partnership for Progress' (Chapter XII). Here we restrict ourselves to saying that it must have authority because it must have power to co-ordinate the contributions of the expertise available to it; and it must have power to adjudicate between interests when they appear to conflict. Thus the body we have in mind has a management function. Since, however, we envisage that management here will be collaborative and participative, we chose to refer to this body as the *co-ordinating team*, its authority deriving from the need to ensure balanced provision based upon a recognised curricular rationale. We are here concerned with the secondary school element of the team, but its full form will represent also the associated primary schools. It is most important that the nature of its authority, ceded to it in the interests of the learners, be understood by all concerned, or else it may be perceived as a threat to professional autonomy. It is no such threat, since it is part of professionalism to recognise that autonomy — of the individual teacher, of the department, of the school — has necessary limits.

8.84 Co-ordination is no euphemism. Amelioration of the S1/S2 curriculum, which is characterised by areas of excellence, but also by overlaps, gaps and fragmentation cannot be achieved without co-ordination. The function of the co-ordinating team is essentially to help all participating teachers and all departments to become conscious of (a) what their contribution actually is (by review, evaluation and communication); (b) how the curriculum as a whole can become more effective, more comprehensive and more balanced by development of courses (through a range of procedures but especially collaboration) and (c) how desirable changes may be achieved through the identification of priorities and the selection of areas for initiatives (gradual innovation).

(a) Review and Information Sharing

8.85 Every department should examine the courses it offers to establish in what ways and to what extent they contribute, through the aspects of experience, to the desirable outcomes. There is, quite obviously, a rough correspondence between the curricular areas of 'established custom' and the aspects of experience, but we wish to stress that while some subjects may relate in a particularly powerful way to specific aspects, all subjects should contribute to the whole curriculum and should become aware of how they do. It is very important — and, in practice, very difficult — to communicate the findings of such reviews so that they become the shared possession of the whole school community, and indeed of the community of associated schools.

111

The use of minutes of departmental meetings must, we think, be the basis of this communication; but there exist examples of rather livelier, more interesting and entertaining modes of communication in the form of in-school newsletters and newspapers. At least one existing instance of the latter addresses itself primarily to pupils, in the endeavour to make school curricular policy comprehensible and sympathetic to the system's major clients (who, in turn are encouraged to comment)[11]. There is potential for *inter-school* newsletters which will inform, not only the school staffs, but pupils and parents as well, and which will aim to make curricular policy shared and understood by all concerned.

8.86 Communication and shared knowledge are necessary preliminaries to three further aspects of review and evaluation:

(i) *Identifying essentials*

8.87 Courses, existing and contemplated, should be examined to identify a limited number of concepts skills and experiences which are uniquely represented by each curricular component. This should enable a lightening of course content to be considered. To take an example: we believe that the pupil who arrives in S3 with some well-established historical understanding and who is able to read, talk and write about history will be more successful there than one who has tried to memorise a large body of historical information. Study of various periods in history will be a vehicle for the desired development of mind, but at this stage is not an end in itself. The object should be to identify a limited number of powerful concepts and essential skills and to develop these as fully as possible through the active investigation of past events and artefacts.

(ii) *Identifying overlaps*

8.88 Courses should be scrutinised to determine which aspects of the intended learnings are the same as or very similar to those proposed by other courses. Many areas of the curriculum will provide activities which develop concepts of space, time, causation, the nature of evidence, processes of verification and falsification. Many areas will use and develop the same or similar mathematical processes and concepts. All areas will be concerned with language development and awareness. Considerations such as these may lead to a more effective use of time, but the main concern should not be a simple avoidance of 'overlap'. It should be to ensure that the differentiated approach from various points of view to the same general concept or cluster of skills actually strengthens and reinforces understanding and application. Science, for example, will contribute certain essential understandings of the relationship between living things and their environment. But so, clearly, will geography.

(iii) *Identifying Contributions to common or recurring themes*

8.89 A review of courses in the light of the aspects of experience we have proposed will reveal contributions to a number of themes which recur through the curriculum: attitudes, beliefs and behaviours in and about a variety of societies, cultures and sub-cultures; healthy living; understanding of and care for the natural and the built environment; the role of popular entertainment and the mass media of communication in making, changing or confirming values and beliefs; the social and cultural impact of technological developments — these are only some of the issues of contemporary concern which teachers will, from their specialist viewpoints, touch upon. They will form growth points for later collaboration.

(b) Development of Courses

8.90 In the light of the kind of review we propose, possibilities for change in existing S1 and S2 courses will almost certainly suggest themselves. Developments in courses at S3 and S4 have made the need for change apparent, and guidelines for S3 and S4 courses have been used as sources for changes at S1 and S2. There are national developments affecting practice at P6 and P7 which will provide a supportive base for S1 and S2. We have already mentioned (para. 6.27) the Primary Science Development Project and its consonance with S3 and S4 science. A beginning has been made at national level to review mathematics teaching by the Committee on Primary Education and the Scottish Central Committee on Mathematics. There have been produced over the years in secondary English and in primary language arts substantial bodies of advice and guidance, both at regional and national level, which share their essential philosophy with new S3 and S4 courses. This list could be extended. Indeed, such has been the level of development in recent years that the problem for subject specialisms is not the lack of guidance, but the difficulty of turning it into classroom practice, relating it to earlier and later experience and to other aspects of the curriculum. That, we believe can be achieved only by the kind of school-based development supported by outside agencies, such as we are here recommending.

8.91 The co-ordinating team's overview of the curriculum will almost certainly reveal gaps in provision, in terms both of our aspects of experience and of new claimants on time such as some of those listed in para 8.24.

8.92 We draw attention to five ways of making new provision. These are (i) integration into already existing departmental courses; (ii) the creation of 'curriculum inserts', short courses or modules with highly specific learning outcomes; (iii) dissemination or interfusion throughout the whole curriculum or broad, appropriate areas of it; (iv) courses or modules collaboratively planned and implemented by two or more departments as elements of larger courses (this may, in the long term, be the basis for a thematic approach to curriculum organisation); (v) any two or more of these four approaches in combination.

8.93 The most effective ways will vary according to circumstances, and it is our convinced view that curricular problems have to be solved by those closest to the problem and aware of all the relevant circumstances. Curriculum design is itself a problem-solving activity. We accordingly make the following suggestions as a basis for discussion within schools leading to their own preferred solutions.

(i) *Integration into already existing departmental provision*

8.94 There is much to be said for this approach. It is in line with our belief that change should be gradual, and has the advantage that individual teachers can be given the psychological support of structures and ways of working they are already familiar with. The most serious objection that can be made to it is that it may exacerbate the tendency for departments to behave like fiefdoms in a medieval kingdom, loyal in principle to a (managerial) overlord, but, in fact, in competition, if not conflict, with each other. A strategy which can help overcome this problem is to locate the new material in one principal place, but require a measure of co-ordination, collaboration or consultation with other departments.

8.95 We offer two examples of this possibility. Media education can readily be absorbed into the S1/S2 syllabus of an English Department. Not only can it be seen as an extension of the range of ways in which cultural meanings are made and communicated, it can — if it is handled in a creative and exploratory way — generate activities in speaking, listening, reading and writing which are now held to be central to the work of English departments.

8.96 It is evident, however, that work with the media involves visual and design elements, areas where the expertise is likely to be in art departments. It is equally true the social subjects, in particular, modern studies, is a resource of expertise for analysing how decisions are made, values sustained or challenged, meanings communicated within contemporary society. It follows that, if English is the chosen location for major work in media education, both art and modern studies departments should be consulted about curriculum components.

8.97 Media education is yet another field where work at national level may be drawn upon by schools[12].

8.98 A second example would be electronics. Here we base our views on the recommendations of the Project Steering Committee of the CCC Project *Microelectronics, Computing and the Curriculum*. The Project Steering Committee, following extensive consultation and a widely representative conference, recommended that electronics should figure in the school curriculum from S1 to S6 and that 'the development of electronics' be located in 'the science laboratories and technical education (engineering) workshops'[13].

8.99 The principal location, we suggest, might well be in the physics department and as part of the S1/S2 science course. But consultation and collaboration would be necessary with the department of technical education.

8.100 Other 'new' curriculum areas which may be dealt with by 'absorption and consultation' would be consumer education and money management[14] which might be located principally in home economics.

(ii) *Curriculum inserts*

8.101 We have in mind here short courses with highly specific and definable outcomes in terms of skill and knowledge. The object of such inserts would be to equip learners with capabilities for application elsewhere in their learning. At the present time, and probably for some time to come, familiarity with computer use and levels of skill in using the keyboard, is likely to be highly variable among S1 pupils. A 'curriculum insert' could ameliorate this. Such a course would be more intensive, more skill-centred, less broad ranging and shorter than the course suggested by the *Microelectronics, Computing in the Curriculum Project* Steering Committee in 1983.[15] This is not to suggest that the aims of that course are in any way overambitious. It is simply to recognise what the MCC itself anticipated; that much of what it sought to achieve by the course at that time would be overtaken in the future in primary schools. It is to recognise further that access to computers in the way we regard as ideal — namely that they be used as learning tools wherever appropriate across the curriculum — may be limited by economic constraints.

8.102 Another skill-focussed area in which the short curriculum insert technique may be appropriate is in confirming or reinforcing basic skills in using reference books and other resources. This might be in S2 a culmination of the planned, long-term learning experience referred to at 5.33.

8.103 What the curriculum insert does not provide for is conceptual development of the kind best tackled as part of a longer course in which the concepts being developed are re-visited again and again in varied circumstances and applications. This is what distinguishes the 'curriculum insert' from a unit of work, module, or short course which is designed as an element in a sustained, overarching course, controlled by long term aims for cognitive development in particular aspects of experience.

(iii) *Dissemination*

8.104 Some important areas are best dealt with by dissemination. Our own list of 'permeators' (Para 5.11) are obvious examples. But these are processes and activities and here we are concerned with content — sets of ideas, special themes, areas of reference. Education to promote multi-cultural understanding[16], education for and about equal opportunities[17], Scottish studies through the appropriate use of Scottish resources[18] should, we believe, all be disseminated throughout the curriculum.

8.105 The great danger, of course, is that what is everybody's business becomes nobody's business. Dissemination may be a recipe for neglect. This, however, is not a reason for retreating from this way of dealing with these matters. It is to emphasise the responsibility of individual teachers, those to whom they are immediately responsible — departmental heads (or perhaps, in some evolving circumstances, course or team leaders) — and the co-ordinating team itself to ensure that neglect does not occur.

8.106 To recommend dissemination is not to exclude the possibility of short units of work dealing specifically with the curricular area in question. Indeed, units to occupy a few periods or hours work and appropriately located (in the instances we have given, English, the social subjects, music, drama, art and home economics suggest themselves) are highly desirable. What distinguishes areas where dissemination should be the major strategy for ensuring their presence in the learning experience is that, whatever their knowledge content, they have primarily to do with values and attitudes, and may in fact be seen as aspects of social education.

(iv) *Collaboration*

8.107 Collaboration in the construction and teaching of courses is appropriate, when, following review and evaluation, it is recognised that existing courses share similar goals, and/or when it is perceived that goals deriving from the desirable outcomes of aspects of experience are best achievable by drawing on the expertise of teachers in two or more specialist areas or departments.

8.108 As we have noted earlier (para. 8.7) the Scottish educational system has an increasing experience of collaborative approaches to syllabus construction. Some of this experience is now of considerable longevity. Science in S1 and S2 is based upon collaborative work, nationally initiated, as long ago as 1969[19], and while the courses based upon it have been subjected in recent years to increasing criticism [20] there has been no criticism of the principle of collaboration between the specialists in various scientific disciplines.

8.109 We commend both the model, *and* the critical comments made of it. One of the most important of these comments is that the courses have failed to respond to changing needs and thinking about science since the late '60s. The lessons to be learned from this, of course, are that teachers must themselves be masters of the material they teach and not the slaves of a pre-ordained course; and that the course must be kept under continual review.

8.110 A second, more recent example at S1/S2 of the development of collaborative approaches is in the Social Subjects. Again this is a national initiative. Guidelines from the Scottish Central Committee on Social Subjects [21] have provided an analysis in terms of concepts (or cognitive objectives), skills and attitudes which demonstrate both what the social subjects have in common and what distinguishes them. On the basis of this they provide a general framework for schools to devise collaboratively planned two-year courses drawing upon the expertise of teachers of history, geography and modern studies. (A similar exercise has been undertaken by a group of Advisers from Fife, Central, Lothian and Borders Regions.[22]) This approach enables the inclusion of contemporary, social, economic and political material. The guidelines are written, moreover, in the knowledge of guidance given to primary schools by the Committee on Primary Education [23] and work following upon it. This means that the basis exists for schools to work out not only an S1/S2 collaborative course but a coherent 10–14 programme.

8.111 Science and social subjects then are probably most advanced in collaboration among the subject areas of 'established custom' and it is doubtless significant that the initiatives have come from beyond particular schools. Yet the interpretation, implementation and monitoring of collaborative courses remain matters for the schools themselves. There is no conflict here with our model of school-based, externally supported curriculum development.

8.112 There are further major areas which in our view are likely to be best served by a collaborative approach.

8.113 (i) The first of these is English, and languages other than English. We have already suggested that there is a parallel here with social subjects: there are common and distinguishing features. We believe that an analysis of this area should be made by national initiative to serve as a basis for collaboration at school level. This is a matter of urgency to which we call the attention of the CCC and the SED.[24]

8.114 (ii) A second area is health education. Physical development and well-being calls for collaborative work from at least physical education, home economics and the sciences. We commend the interest that the Scottish Health Education Group is showing in the 10-14 area and look to that body in association with the CCC to provide the national guidance that schools can make use of.

8.115 (iii) As we argued in 6.49,many subjects have contributions to make to technological activity, awareness and appreciation. The Committee on Technology's Final Report[25] contains a valuable chapter on technology across the curriculum. The contributions of technical and home economics departments in collaboration are clearly important, but mathematics, science, art and social subjects all have contributions to make. There are already welcome developments in collaborative approaches in 'practical education' from departments of home economics and technical education in a number of schools (for example, in Lanark division of Strathclyde) and we commend this development and wish to see it extended.

8.116 (iv) An association of English teachers and drama teachers with the teachers of the social subjects to contribute to one broad topic is a form of collaboration already to be found in a small number of schools. The reciprocal illumination of life in different times and places offered by the perspectives of the social subjects on the one hand, and story, poem and drama on the other is powerfully educative. Art work can add its own expressive and communicative power.

8.117 (v) Specialists in the social subjects and the sciences might work together to create short courses on understanding and caring for the physical environment. Common units of work might begin to appear early in S1 as a development out of primary school work.

Collaboration — Some Caveats

8.118 Although, as we have said, there is increasing experience available in both the theory and practice of collaboration, there is still much to be learned about this difficult process. We commend the helpful work already referred to by Morrison and Munn[26], and also the work of Currie and Weir reporting on the development work in Social and Vocational Skills.[27] The relevance of this research is expressed in its sub-title, 'an approach to a multi-disciplinary curriculum development'. Both these reports, however, deal with a later stage in schooling and there is a need for similar studies to be done in the significantly different circumstances of 10 — 14. Case studies, in which the writing and evaluation is done by the teachers themselves, with help from advisory staff, or college of education staff, are also needed. Some of the problems of inter-departmental collaboration can be identified and anticipated. 'Forced marriages' are unlikely to work — that is collaboration decreed by school management without the commitment of teachers involved. 'Arranged marriages' — that is collaboration in which departments are persuaded to come together — do appear to work in schools where there is a culture of innovation and a background of success in it. The most effective collaboration appears to arise when there is a shared perception, by teachers, of a need existing among pupils. It is, accordingly, valuable to spend time on developing such perceptions and inviting departments and teachers to propose ways of making provision for these needs.

8.119 Collaborative courses, we have seen, tend to be planned mainly on content rather than process. This may be because it is easier to talk about content than process. We emphasise, therefore, the importance of bringing to the foreground of concern the processes of learning in course planning.

8.120 This may well mean creating the opportunity for teachers to observe each other at work and to discuss their work. We are fully aware of the difficulty, in the circumstances of most schools, for teachers to find time for either of these activities — a situation to which we draw the attention of regional authorities and the Scottish Education Department. The need to provide for structured opportunities for discussion is a pressing one.

Distribution and Use of Time

8.121 So far we have argued for a curricular structure based in and developing gradually from the descriptive categories of 'established custom'. We envisage a *stage of development in which traditional timetable labels are much the same as in established custom, but in which there would be a great deal of attention to links, common concerns, shared development of skills and concepts, and elements or units of courses planned and/or taught collaboratively.* We set out possible stages of the co-ordinating team's review at Figure 6, and at Figure 7 we set out a possible structural model showing how the developmental process might stand at this stage. Links with the primary curriculum are indicated.

8.122 At such a stage, we should envisage time being distributed in a way very like that set out at Fig 5. But three other factors affecting the use of time are for consideration.

Rotation

8.123 A device in timetabling increasingly common is to differentiate between subjects or curriculum areas which recur regularly on a weekly basis and those which appear for perhaps a school term to be dropped and replaced by another subject. This latter procedure — known as rotation — is valuable in that pupils and teachers have a better opportunity to get to know each other and that more sustained and intensive experience can be achieved. Subjects generally agreed to be most usefully maintained on a full-time (not rotated) basis are modern languages, English, mathematics, science, physical education. A disadvantage of rotation, noted in *Learning and Teaching in the First Two Years of the Scottish Secondary School* (para. 2.19)[4] is that it makes inter-subject collaboration more difficult.

8.124 We believe that the *kind* of inter-subject collaboration is a key consideration. Since it is strongly recommended that the social subjects be planned and taught as a coherent course over the whole S1/S2 period we believe that the subjects should be rotated only if the co-ordinating team is convinced there is no threat to effective joint planning. The same applies to technical education and home economics. We think on the other hand that collaboration and consultation will not be significantly damaged by rotating the following subjects: art, music, drama and religious education.

FIGURE 6 – Developing the Curriculum

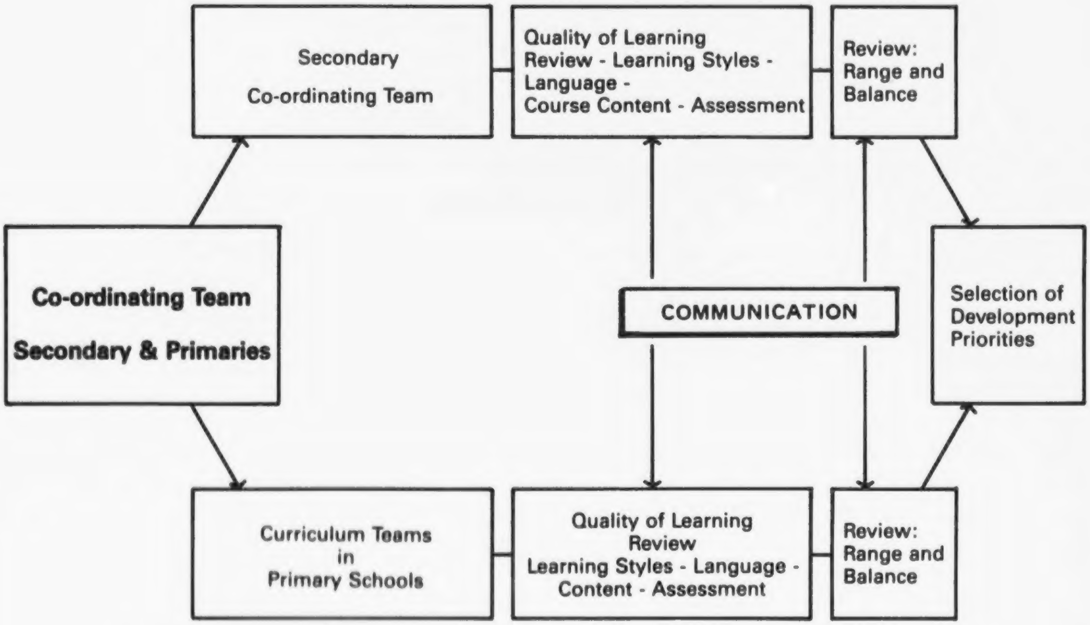

Secondary Co-ordinating Team
Quality of Learning Review - Learning Styles - Language - Course Content - Assessment
Review: Range and Balance
Co-ordinating Team Secondary & Primaries
COMMUNICATION
Selection of Development Priorities
Curriculum Teams in Primary Schools
Quality of Learning Review Learning Styles - Language - Content - Assessment
Review: Range and Balance

Figure 7 Education 10 – 14: A Possible Structural Model

PRIMARY SECTOR	BOTH SECTORS			SECONDARY SECTOR		ASPECTS OF EXPERIENCE most significantly developed
CURRICULAR CATEGORIES	DISSEMINATION: PERMEATING ACTIVITIES	DISSEMINATION: SPECIAL THEMES	INSERTS	SUBJECTS GROUPED for significant collaboration	WEIGHTING by Time	
LANGUAGE ARTS	Independent and Co-operative Learning - Reasoning and Problem Solving - Using Access Skills - Computer Use - Language Development - Learning to Learn - Social Education - Moral Development - Mathematical Applications & Development	e.g. Education for International Multicultural Society - Equal Opportunity Education - Using Scottish Resources	e.g. Library Skills: Computer Familiarisation (located as convenient)	LANGUAGES (Modern - Classical - Gaelic - English) Literature Mass Media	20%	Communicating - Understanding Self- Expressive/Appreciative Activity - Living in Community and Society - Moral Development - Religious Awareness
EXPRESSIVE ARTS PHYSICAL EDUCATION				TECHNOLOGICAL ACTIVITY ART MUSIC DRAMA DANCE/EXPRESSIVE MOVEMENT HEALTH STUDIES PHYSICAL EDUCATION	20%	Expressive/Appreciative Activity - Communicating - Practical Skills - Understanding Self - Religious Awareness - Physical Development and Well-Being
ENVIRONMENTAL STUDIES (including Health)				SOCIAL SUBJECTS (including ECONOMICS)	10%	Living in Community and Society - Understanding Self - Communicating - Using Mathematics - Moral Development/ Religious Awareness - Understanding the Physical and Natural World
				SCIENCE (including ELECTRONICS)	10%	Understanding the Physical and Natural World - Practical Skills - Using Mathematics - Physical Well-Being - Communicating - Understanding Self
				TECHNICAL EDUCATION HOME ECONOMICS	15%	Practical Skills - Using Mathematics - Communicating - Physical Well-Being - Expressive/Appreciative Activity
MATHEMATICS				MATHEMATICS	10%	Understanding and Using Mathematics - Communicating - Understanding the Physical, Natural World - Living in Society - Expressive/Appreciative Activity
RELIGIOUS EDUCATION PASTORAL CARE				Time adjustable for: RELIGIOUS EDUCATION GUIDANCE Tutor/Base Teacher Flexible Time	15%	Understanding Self - Living Together in Society - Moral Development - Religious Awareness

Period Length

8.125 There have been changes in a large number of secondary schools away from the traditional forty or thirty-five minute period time-span to larger time blocks. We commend this. The kind of learning and teaching which we believe to be essential for the achievement of our desirable outcomes calls for extended periods of time for co-operative work and independent learning. Again, however, there is no simple formula to be applied here. Extended periods create real problems for teachers who over the years have adapted their teaching practices to suit shorter periods with occasional doubles. Teaching styles which are suitable for short periods — for example, exposition, followed by individual practice; or extended teacher-whole class interaction — need to be supplemented by planned co-operative activities in which pupils work at their own pace. Teachers need time and support to make the most of longer time units.

Suspended Timetables or 'Time Out'

8.126 At the stage of development we are here envisaging, we suggest that serious consideration be given by the co-ordinating team to building into the curriculum an opportunity to break from the normal routine operation of the timetable — perhaps at the rate of one half-day per month — so that activities such as visits, displays and exhibitions, musical and dramatic performances, and projects related to the environment could take place. Such events should not be seen as 'outings' or 'frills', but as an integral part of the total educational experience of the pupil at this stage.

8.127 The facility of time-out would require sensitive planning, not least in the respect that it would not always take place at the same time in the timetable.

8.128 An arrangement such as this could provide an incentive for pupils; greater scope for exploring new activities; an end-piece for collaborative ventures and an opportunity for parents and interested adults in the community to see and become involved in the work of the school.

TOWARDS A MODULAR STRUCTURE?

8.129 To this point we have considered a gradual process of development based, as we have said, on familiar curricular categories — the subjects which have given their names to timetable slots since, at least, the 1920's. It is our firm belief that the specialist expertise that secondary teachers make available to children from their own subject background is of the highest value.

8.130 This, however, is in no way in conflict with a more radical curricular restructuring no longer based on subject categories, and we wish to give what can only be a preliminary consideration to one such structure. We emphasise, however, that we have not been convinced of either the value or feasibility of a restructuring of a very radical kind until there is widespread understanding of its potential virtues, and widespread experience of the collaborative processes we have been advocating.

8.131 We believe, however, that as emphasis continues to shift from curriculum as a list of things to be covered to curriculum as processes through which learners achieve desirable outcomes, the S1-S2 curriculum co-ordinators might raise questions such as the following:

> Have we got the best ways of defining and labelling areas of the curriculum?
>
> Have we adequately developed relationships between areas?
>
> Have we found the best way of defining elements in pupils' experience in terms of time? For example, is it useful to speak of a subject or group of subjects with x periods per week for a year;
>
> or, might it be better to think in terms of sequences of units or modules comprising themes, topics or elements in a 'subject' to which one or more departments might contribute, either by combined contributions to each module in a sequence, or by concentrated departmental contributions in particular modules in a sequence?

8.132 We recognise that the feasibility of a move towards a modular structure is dependent, not only on educational considerations and teachers' attitudes to them, but also on administrative, and especially, timetabling possibilities. These are dependent on structures and patterns of timetabling and staff deployment elsewhere in the school. And, of course, there are reasons to believe that, arising principally from developments in education at 16+, a predominantly modular structure may become the norm in secondary schools.

8.133 A modular structure, carefully introduced and continuously monitored, could at S1 and S2 effectively provide for coverage of our aspects of experience and the development of our desirable outcomes. In such a structure the following observations would apply:

8.134 (i) Modules (components or units) should not be too small. A notional duration of 40 hours — or occasionally 20 — might be administratively convenient. Further breaking down of time to 10 hours would be possible, but for small units of time it would generally be important that a series of such small units were taught by the same teacher or team.

8.135 (ii) Such components could be adapted to fit many purposes. A sequence might be devoted to successive aspects of mathematics, or technical modules. A pattern of parallel and sequential modules on themes such as people in space, man the tool-user, materials, people and the environment, growth and nutrition, international society, understanding business and enterprise, might emerge.

8.136 (iii) There would be scope for choice such that all learners developed all aspects of experience, engaged in all permeating activities and achieved the desirable outcomes, but were able to choose some modules rather than others. (e.g. After some common experience in art, drama and music, pupils might be able to choose to do more of some in accordance with interest — more art, less music, or vice-versa; a module on photography, or television, or using the arts in the home. Technical education might offer some choice.)

8.137 (iv) If it were found that certain cross-curriculum activities needed a little time on their own, modules could be fitted in: for example, multicultural education, social development, access skills.

8.138 (v) A modular system would make it easier to adopt the principle that everything does not have to happen in every week. Systems of sequential, parallel and rotating modules are possible.

8.139 (vi) Initially a modular time structure could be adopted without much departure from existing subject responsibilities: science might be taught in say 5 x 40 hour or 10 x 20 hour modules. However, as increasing numbers of modules appeared which did not exactly correspond to existing departmental responsibilities, but, rather, required contributions from several departments, modules which were thematic or concerned with a new pattern of skills rather than existing subjects, very careful attention would have to be given to the following points:

(a) The total pattern of units or modules must form a coherent structure of experience.

(b) The activities in the modules and the sequence of modules must ensure systematic building of skills and understanding.

(c) The S1-S2 co-ordinating team must pay constant attention to:

achievement of the desirable outcomes; rigorous development of skills, concepts and understanding; overall balance in the aspects of experience and permeating activities.

8.140 (vii) Work at national/regional level may be required in mapping suitable patterns of modules and in helping to develop appropriate activities.

8.141 (viii) In a modular structure, outcomes, aspects of experience and the permeating activities will be the essential criteria for balance. Time allocation by subject will no longer be appropriate.

8.142 (ix) In the development of a modular structure, departments may find that increasingly they contribute to modules and sequences of modules rather than simply teaching their subjects. However, the contribution which teachers make as experts — as mathematicians, geographers, English specialists, or whatever, is absolutely vital. But teachers must also think beyond their basic expertise. There may be a considerable choice of specialisms which can contribute to a thematic module.

8.143 (x) The planning and course development must include representatives of all relevant specialisms. However, there should be some degree of flexibility in decisions about who will teach each module. Small teams, or individual teachers, should have responsibility for clusters of associated modules. (Compare general science at present.) Careful planning and some extension of teachers' areas of special responsibility should make it possible to keep down the number of individual teachers encountered by any given pupil.

PRIMARY-SECONDARY COLLABORATION

8.144 We have dealt with P6 and P7 separately from S1 and S2 because of the different conditions that exist in the two sectors. But, in the gradually evolving structural arrangements, which will reflect evolving policy, the two sectors must work together.

8.145 It has been put to us that the most logical way to proceed is to begin with the group of primary schools associated with the secondary, and having selected an area of the curriculum, work towards agreed shared and common practices in those primary schools.

8.146 We do not wish to dismiss this order of proceeding, but our observations in the field in those case studies we have monitored suggest that the work is most effective when the secondary school and all the primary schools are involved. The amount of learning by teachers across the sectors is very great, and the involvement of the secondary school provides a focus which helps to bring the associated primary schools together.

8.147 The co-ordinating team should plan and act for the whole partnership of associated schools from the start of the process.

SELECTING PRIORITIES FOR 10–14 DEVELOPMENT

8.148 We have suggested that development should be based upon a review by teachers of their own practice. Following that, we have suggested departmental/school review of curricular range and balance. On the basis of that review we have suggested five modes of development and innovation. Collaboration, we have said, is difficult, but may lead to a transformation of curricular structure.

8.149 We stress that this is an end that can be reached only gradually and with teachers in control. We further stress that the whole curriculum cannot be changed simultaneously. The burden on individual teachers and on the school as an institution would be far too great.

8.150 We recommend a selective process. The areas we have seen being developed (involving the secondary and all associated primaries) have been:

environmental studies - - - - - - - - - - - - - - - - - social subjects and science
science - science
aspects of language arts - English
mathematics - mathematics
music - music
art - art
religious education - religious education
physical education - physical education

8.151 In those circumstances where there is little experience of collaborative work on curricular matters, there is much to be said for selecting as a priority an area that is new, or relatively new, to teachers in both sectors. The planning process then becomes a joint learning process as well. The application of computers, media study, health education, are areas worthy of consideration.

8.152 Reference to Figure 2 in this chapter will suggest other possibilities. The largest number of curricular areas we believe from observation to be feasible for simultaneous cross sector development is three.

8.153 We urge regional and divisional authorities to negotiate with groups of schools to select particular areas of the curriculum so that over a division or region there is a wide and varied coverage. This will make possible the effective use of advisory and other support staff. Equally important, it will generate teaching materials, guidelines, assessment procedures which can be shared. A degree of economy of effort and cost can thus be achieved.

SUMMARY

In this chapter we recommend a gradual move to structural change in the light of principles enunciated in earlier chapters. This change should be co-ordinated by a team of teachers, both primary and secondary, supported by external agencies. Change should be based on an evaluative review of (1) the quality of learning and (2) the range and balance of curriculum existing in the particular group of schools. Reviews should take place within the whole group of associated schools. Following review, developmental priorities should be selected and a manageable process of innovation begun so that coherent and progressive learning can be introduced 10–14. In the primary schools this will entail an analysis of their activities in terms of skills and concepts and conscious structuring of these through the areas of study selected. In the secondary school this will, in the long run, entail significant changes in the weighting given to the traditional subjects; changes in subject content; significantly increased consultation and collaboration between subject departments. The possibility of a curricular structure in the secondary school based upon modules, not necessarily related to traditional subjects, is discussed.

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CHAPTER IX

LEARNING, TEACHING AND ASSESSMENT

9.1 At the heart of this Report lies the notion that learning is the active process of acquiring skills and understandings in order to make sense of and live effectively in the environment.

9.2 The central features of learning are thus activity and purposefulness. (Activity should not be confused with "busyness").

9.3 We have further taken the view that learning as we have described it is a normal, natural, human activity and that virtually all children want to learn. Human children share with other creatures the need to master their environment in order to survive in it: indeed, it is observable that this is precisely what happens. Even those in the classroom who are plainly not learning what the school would like them to learn, are learning how to avoid learning it, and also learning how to avoid or minimise any undesirable consequences of not learning it!

9.4 The ORACLE research[1] has revealed what all teachers have experienced, that children have developed an almost endless range of devices — of varying degrees of sublety — for frustrating the teacher's intention to teach. This is a form of learning for mastering the environment, but not one to be encouraged!

Willingness to Learn

9.5 The first problem for the teacher is not to create willing learners, but to render the learners willing to learn what the teacher wishes them to learn.

9.6 In what we have written, particularly in Chapter V and VIII, about learning, teaching and the quality of learning, we have had in mind the need to engage learners actively. We believe that the styles of learning and teaching we have so far emphasised will help to do this and therefore to promote willingness to learn. That emphasis has been on co-operative working, problem-solving and enquiry.

Creating Contexts

9.7 It has also stressed the importance of creating contexts as a device to enable learners to grasp the significance to themselves of the tasks they undertake. In the primary schools, the class teacher has the advantage of being able to draw together into a meaningful relationship all the tasks of the day. S/he may use experiences of the children in and out of school and the environment itself is likely to be a rich source of contexts. Contexts can be created from real, simulated or imaginary situations. The contextualisation of learning is just as valuable when the children move to secondary school. The environment, real life, simulation and children's imaginations can continue to provide potentially powerful contexts for learning. The opportunities to root learning in contextualised, authentic and simulated real life experiences will be much enhanced in S1 and S2 by the gradual adoption of the structural changes advocated in Chapter VIII. Particularly significant are longer periods, outdoor experience through "time-out", inter-disciplinary collaboration and the deliberate co-ordination of children's learning experiences across the curriculum.

Other Motivating Features

9.8 Within the kinds of learning situations we are here envisaging, it is possible to promote other factors which help motivation. For example, since learners are engaged in making their own meanings and artefacts, credit can be given to their own understandings and skills, even if these are incomplete or immature. Anxiety is reduced because learning is not always taking place for specific assessment questions. Learners can put their own individual stamp on what they produce. They are likely to think for themselves before trying to internalise answers. They may develop new ways of using and applying the knowledge, understanding and skills they already possess. All such activities in which learners are, in considerable measure, in control of their learning activities, maintain and add to a willingness to learn.

Creating Interest

9.9 The emphasis we have chosen to give up to this point should not, however, be misunderstood to mean that we are suggesting that teachers should simply follow and develop the learners' own interests. Of course, they should whenever that is possible and desirable. But what it most significantly means is that teachers should be using every means at their disposal to *create* new interest among the learners.

System and Flexibility

9.10 Nor is it our intention to suggest that carefully ordered and planned learning sequences to promote patterns of skill and understanding are not valuable. If understanding is viewed as the structure of ideas and relationships which make sense of experience, then systematic planning for the development of powerful ways of understanding in the minds of learners is an essential part of good teaching. As we argued in para 5.47, the claims of epistemology and psychology converge in the processes by which pupils come to understand the world and lay the cognitive foundations for effective functioning in society. The key to understanding is meaningful learning, the active process of integrating new ideas into what David Ausubel and his associates call the learners' "existing cognitive structure"[2]. This process of integrating new ideas into the matrix of existing understanding depends on the match between the new ideas and the existing ones, and this, in turn, depends on the sequence and grading of learning activities. But, as Ausubel's model also shows, meaningful learning depends critically on the intention of the learner to make sense, that is, on the willingness of the learner to question, challenge and relate what is offered to what is known already.

9.11 This intention to attack new ideas actively and to make them part of what one's own understanding is, seems to depend on a complex set of motivational factors. We emphasise two of these which teachers can influence. First, the intention to make meaning depends on previous experience of being able to make sense of the particular kind of ideas being encountered. In terms of Benjamin Bloom's mastery learning model[3], the understanding acquired in one learning task and the associated feeling of confidence that arises from successful understanding, become conditions for success in the next unit of learning. We return to this important argument in para 9.29 below. Secondly, the intention to make sense of what school is presenting depends very much, we would argue, on the extent to which the understanding achieved is for the learner a meaningful way of making sense of his/her world. Simply to internalise someone else's understanding is not enough; the understanding has to become part of the learner's way of making sense of his/her experience of the world. Clearly then, attention to the sequence and progression of learning is important. So, too, is attention to the concrete contexts which pupils are being asked to understand.

9.12 But some caution is needed in planning learning sequences. Well thought-out programmes are necessary, but the programmes should be seen as flexible guides to action in the class room. They should enable teachers to display achievable sequences of objectives. But planning should be open to alternative paths in the development of pupils' thinking. It should allow learners to come at ideas in different ways and there should be scope for unforeseen directions of interest. Planning will be related to the sequence of ideas in relevant disciplines, but it should recognise that the psychological steps in learning do not always conform to the logical steps in those disciplines as they are understood by experienced adults. And, of course, it is always necessary to think very carefully about just what previous skills and knowledge really are necessary for the next step in learning. Some subjects are much more sequential in structure than others. Finally, we would suggest that though attention to the sequence of ideas in the subject matter is important, planning for progression in the activities through which learners develop understanding and skills, is even more important.

Teaching Styles

9.13 The ORACLE research we have referred to shows to a convincing degree that it is the teacher's style which is the main determinant of the ways in which pupils learn. The evidence shows that, although pupils do have different ways of approaching learning and school work, they will change their learning behaviour to match the dominant style of the teacher. To put the matter another way, the researches "provide overwhelming evidence that pupil behaviour is largely a matter of coping with the demands of the teacher"[4].

9.14 This calls for a heightened awareness on the part of teachers of their own teaching and the effects it has on the learning process. It also calls for willingness and ability to match modes of teaching to specific intentions for classes, groups and individuals as appropriate. Hence we do not suggest that there is any one pattern of teaching that is of itself uniquely valuable. The desirable outcomes that have been proposed can only be met by providing a range of approaches. It is not appropriate, therefore, to argue that one approach to teaching is better than another but rather to start from the purposes of teaching and the learning outcomes already being achieved. Expository teaching, for example, has a part to play as do investigations and problem-solving on a group or individual basis.

Using and Managing Learning Resources

9.15 A range of teaching styles which includes in a significant position the promotion of problem-solving, of enquiry, of reasoning and the use of evidence, implies access to and the ability to use a wide range of resources. COPE in *Primary Education in the Eighties*[5] has emphasised that teachers have to be able to match the resources used for teaching to decisions made about the curriculum and the modes of teaching adopted. We endorse this view of resource use as an integral part of learning and teaching and all that it implies for individual teachers and schools. Many primary schools have taken steps to organise the resources available in school in such a way that pupils and teachers are aware of what is available and how to gain access to it. We believe that this is a highly desirable development and that it can be a significant step in helping children in learning to learn.

9.16 An effective resource organisation will also be very helpful when schools become involved in the process of curriculum liaison. Schools will have to identify the resources needed for the developments they are working towards, and an awareness of possible gaps or duplication will help the associated schools to explore ways of assisting each other or to decide what new resources have to be produced or acquired.

9.17 Valuable advice on resource organisation is contained in documents such as *The School Library Resource Service and the Curriculum 'before five' to 'sixteen plus'*[6], *Library Services and Resources for School Education in Scotland*[7] and *Resource Based Learning*[8]. H M Inspectorate have also made recommendations about the use and organisation of resources in their Report on this subject[9]. This includes a checklist of points on quality and use of resources for Assistant Head Teachers in secondary school. With a small amount of amendment this list would form an appropriate basis for reviewing resource organisation and use in the 10 — 14 context. (See Appendix C).

9.18 The classroom itself should be a resource for learning and a pleasant working base since its atmosphere is an influential part of the climate for learning. In particular, it should provide for easy access to books other than text books. Class libraries of a general kind, with an interesting selection of fiction and non-fiction, supplemented by special collections for particular thematic or topic studies, should be available in every primary classroom. We should like to see a much greater availability of immediately accessible books in secondary classrooms and not only English classrooms. Every subject has interesting and attractive reading material associated with it. School libraries and resource centres should outreach into specialist classrooms, laboratories and workshops. Specialist teachers should be encouraging learners to explore their subjects further through reading. The importance of sustaining the experience of pleasure and satisfaction in reading in the 10 — 14 period is very great. The circumstances of schooling at later stages, including the pressures of examinations, as well as the social and cultural circumstances of the great majority of our pupils, act against the reading habit. Much more could be done, at no great additional expense, and with little extra effort, to help to sustain it. Positive support for reading, especially in early secondary, is needed in the face of evidence[10] of the decline in the reading of books at the transition from primary to secondary, especially among boys.

The Teacher as a Team Member

9.19 There is a strong tradition in Scottish schools of teacher autonomy, and it is of great and continuing value that each teacher should her/himself principally determine the nature and content of lessons. This power of decision enables them best to provide, most directly, for the learning needs of the group of children for whom they are responsible.

9.20 The desirability of this kind of freedom has to be balanced against the need to provide for continuity between classes and schools. The solution to this problem lies, we believe, in agreement on skills, concepts and understanding to be developed and in the negotiation of intentions about content to be covered. Such negotiation should ensure that the same content e.g. a particular topic in history, is not repeated pointlessly. It should also ensure that where topics such as "climate", "agriculture", or "the local community" are revisited, this is done in the full awareness of the learners' previous experience and with progression in the level of skill and understanding expected of the pupils. We are aware of instances of associated schools agreeing on the development of a topic over the primary-secondary stages and on the content appropriate to each stage. Along with continuity, the key issues of coherence and progression are fundamental to our concept of what constitutes a 10 — 14 curriculum, and, at each stage within the 10 — 14 experiences, every effort should be made to achieve an experience for the learners that emphasise the coherence and progression within relevant contexts.

9.21 In other words, the teacher's autonomy has to be given expression as a contribution to the work of a team whose collaborative decisions are made in the interest of learners.

Co-operative Teaching

9.22 A good example of the teacher as team member occurs in co-operative teaching situations, which we have already commended at Para 8.107.

9.23 Many secondary schools have gained experience in the use of co-operative teaching as a strategy in making provision for children with learning difficulties. At times this has involved staff working alongside teachers from other departments and being able to offer help and guidance to pupils within the class context. This arrangement works well providing as it does the opportunity for flexible organisation of the class. An essential part of co-operative teaching such as this is advance planning both of materials and of teachers' time. The consultation and discussion between the subject specialist and the learning support specialist has benefits in its own right in terms of the experience and insights that a specialist in learning can bring to the specific concerns of the subject specialist. Subject specialists should be first and foremost concerned with learning and teaching. However, the learning support specialist can provide an up-to-date source of information and advice which can enhance the work of the subject specialist and can make significant contributions to the nature of the learning tasks presented to pupils by helping to make the language and learning demands implied in the tasks explicit and by advising on appropriate methodology for the intended outcomes.

9.24 Genuine co-operation can take place, too, between teachers in upper primary and secondary within the context of topics being studied in the primary classes. Specialist insights and understandings can help to extend and deepen aspects of an environmental studies topic for example. Primary teachers in many areas already work co-operatively with visiting specialist teachers in art, music, drama, home economics and PE. We recommend that this be extended to other curricular areas provided that the specialist input falls within a context that has been developed as an appropriate part of the primary school programme within local 10 — 14 developments.

Individual Differences and Learning Difficulties

9.25 All individuals differ and when these differences become extreme, as in learning failure, they require special attention. However while recognising the great importance of attending to learning difficulties we would emphasise that in all learning and teaching attention to individual needs is important. We will refer later, in Chapter XII, to the need for schools to provide a secure basis to help all pupils to cope with the learning experiences which they are offered. The class tutor or base teacher in S1 and S2, along with the existing arrangements for pupil care in primary schools, offers one means of helping individual learners to cope with the blocks and difficulties that every learner experiences.

9.26 The provision of support in co-operation with class teachers also can provide a means of reducing the difficulties experienced by pupils, and the specialist help that exists for pupils with more extensive or specific learning problems remains a crucial part of the provision for individual differences. The specialist learning support teacher can however also be seen as having an important contribution to make in terms of teacher support and staff development. The complexity of the professional task of teachers is such that the support of a colleague who has a knowledge of the ways in which difficulties can arise and how to deal with them is needed. We have already referred to the consultancy and advisory role that learning support staff can play in co-operation with their colleagues in other departments in secondary schools and we believe that such a role requires a specialist teacher. Such a learning support specialist would also have an essential role as part of local 10 — 14 planning groups. In both primary and secondary schools, teachers are expected to deal with learning difficulties within their classes and in the context of the class programmes of work and we believe that this is the most appropriate approach. However it is not common for primary schools to have the services of a learning support specialist and while we do not recommend that all primary schools should have such specialists on their staffs we do believe that it is important for primary teachers to have access to specialist support in order to cater for children who have persistent or deep rooted difficulties. We therefore commend a 10 — 14 structure which involves learning support specialists in both primary and secondary contexts. As well as the insights that can be offered from the learning support teacher's expertise an element of continuity is built in with teachers being known at both the primary and secondary stages. This is of particular benefit if the learning support teacher can become involved in a variety of activities in the associated schools and does not become identified with problems or "backwardness". The experience of Grampian Region, who operate a system similar in structure to this, suggests that such a learning support specialist can be an effective agent for continuity between primary and secondary schools.

Cumulative Problems in Learning

9.27 One of the most striking characteristics of pupils' learning in schools at present is the way in which small differences become large. Teaching seems to interact with differences in what pupils are and can do in a fashion which tends to increase the differences. Success tends to success; failure is cumulative. Recent confirmation of this assertion comes from the *Cockcroft Report*[11] on mathematics which describes a "seven year difference" in the attainment of pupils by the end of primary education.

9.28 Self-image is also a powerful component in the pupil's history of success and failure. Pupils come to see themselves as people who can or cannot succeed in the things which are valued by schools. The growth or decline of a positive image of oneself as a learner can commence from small events. A teacher's ill-judged response to a few wrong answers, a small puzzlement resulting from an absence, or the derision of one's peers can start a decline in self-confidence or reinforce an already negative view of oneself in relation to school learning tasks. The evidence available from a considerable body of research[12] into the effects of teachers' attitudes and expectations on pupils' attainments is not always consistent but, taken as a whole, points strongly to the powerful influence of teachers' attitudes to ability, sex, race, social class and other critical variables on the performance of groups and individuals in schools. It seems fairly certain that the relationship between pupil and teacher attitudes continues to exert a differential influence on pupils' life chances. Colleges of Education are well aware of these factors in success and failure and have done much to assist the spread of professional understanding of them. However, it seems that understanding is not enough. Well intentioned teachers, for example, continue to label children in their thoughts and conversations with colleagues in ways which reflect a dangerously oversimplified classification by general ability. Pupils are described in generalities such as "bright", "dull", "good O-grade material" or "not much up top". These same teachers will often reject utterly the idea of streaming by ability. We hope that the increased attention which Colleges are giving to the processes as well as the content of teacher education will contribute to an improvement in the quality of attitudes and interpersonal relations in the classroom.

9.29 There can be no doubt that at a given moment some children are more able than others to undertake a new learning task successfully. Success is, as we have seen, importantly related to self-image and self-image is critically dependent on previous learning history. In addition the actual cognitive abilities for new learning tasks are we believe much more the product of the child's learning history than is often supposed. Whatever the theoretical status of the concept of general ability may be, it seems to be singularly unhelpful in teaching. It is much more to the point to analyse the things which pupils need to be able to know and do in order to undertake further learning successfully. They are in Bloom's [13] words, "alterable variables" and through attention to them and to the quality of learning experiences it may be possible for large numbers of pupils to achieve learning success which in turn would improve their attitudes to further learning.

ASSESSMENT

9.30 Assessment is an integral part of the learning and teaching process and should go on throughout that process. Almost from moment to moment the good teacher is assessing the response of pupils and making adjustments to their activities or to his/her actions. In addition there are more formal assessments, often in the later stages of a unit or piece of work.

9.31 There is, we believe, a tendency to regard the assessment of learning strictly as a matter of being able to describe *what* children can or cannot do. However, it is also important for the assessment process to reveal *why* pupils cannot do things. In this connection we would draw attention to the need for a variety of assessment techniques some of which should enable teachers to explore pupils' thinking and enable pupils to become aware of their own thinking. A wide range of assessment techniques is needed to cope with the wide range of intentions that a teacher is likely to have in relation to individuals and groups. Involving pupils in the assessment of their own work is part of that range of techniques; this can help children to internalise standards to contribute effectively to an understanding of themselves as learners.

Purposes of Assessment

9.32 The goal of assessment is to provide information to help teachers and pupils make decisions. At 10 — 14 the information provided should primarily be useful in helping pupils learn more effectively and teachers provide better educational experiences for them.

9.33 The Dunning Report, *Assessment for All*[14], emphasised that assessment must play a part in every pupil's education with the paramount aim of helping individuals derive the maximum benefit from their education. Assessing however implies much more than end of year examinations or formal class tests which have been a familiar feature in Scottish schools, particularly at the secondary stage. Assessment is not only testing.

9.34 Assessment is commonly classified as formative, summative or diagnostic. Formative assessment might be described as a monitoring activity in which both the learner and the teacher obtain information about the learning and teaching process. Formative assessment can take a variety of forms and may include testing but that testing is not summative in that it is not regarded as final. Indeed no assessment can be regarded as final. Summative assessment can be regarded as bringing together for the learner and the teacher the overall progress that has been made and as concentrating on those aspects of learning that are intended to carry over into future work. Both formative and summative assessment are part of the learning and teaching process and it is important to consider how both of these contribute to continuity and progression in different aspects of learning.

9.35 "Diagnosis" is also an essential part of assessment. Diagnosis can be thought of as involving several stages: first, identifying an area in which a pupil's learning is not satisfactory; then pinpointing the kinds of weakness shown; then probing the reasons why these arose. Many mistakes that pupils make may arise from very specific causes relating to their immediate experiences in the classroom, and these are often best tackled by informal methods. It is always useful to discuss pupils' answers — right and wrong — to gain insight into their thinking. Often the process of diagnosis may itself put right specific difficulties. Other remedial actions range from giving pupils more practice to consulting a learning support specialist. It depends how wide-ranging and how deeply-seated the difficulty is thought to be. There is no reason why the concept of "diagnosis" cannot be extended to the identification of pupil's strengths and attempts to build on them. The key point is that assessment can provide information but cannot prescribe how the teacher will act on this information. Action will depend upon the teacher's professional judgement.

9.36 The results of formative and diagnostic assessment can motivate learners, particularly by providing information about strengths and difficulties and by leading to appropriate work for each individual. The Dunning Report suggests that assessment can motivate by "placing tangible achievement within his reach"[15].

9.37 Dunning also pointed out that testing a pupil's attainment "is an essential part of the educational process since pupils and teachers require to know what degree of success is being achieved"[16]. Such feedback will be more precise if teachers have a clear view of assessment and how it is used especially if they and their pupils are clear on the criteria for measuring success for each pupil.

9.38 Assessment is important for course choices at the end of S2 but this requires considerable caution. First the predictive power of grades in S1 and S2 has never been shown to be very reliable. This has much to do with assessment procedures, which may be made better, but it has to do even more with the difference in demand that may exist in the same subject as between S2 and S3. A further consideration is that a pupil's suitability for a particular course may be better judged on grounds other than grades for attainment. Pupils' interests, enthusiams, self reliance and social skills as well as achievements, require assessment so that the fullest information is available for those decisions. It is essential therefore for pupils to take part in self-assessment, monitoring their own progress and building a better informed dialogue with teachers in order to encourage self-awareness on the part of the pupils and a fuller understanding by teachers of their pupils' requirements. In this process of negotiation pupils and their parents need to be made aware of the nature of the courses in terms of workload, difficulty and the kinds of skills needed for success. Information about the "pre-entry" requirements for courses is as important for choice-making as are the formal and informal assessment of the pupils. It is useful to remember that within any one subject choice in the Standard Grade arrangements a very wide range of attainment is catered for so that the problem of placing pupils is greatly eased.

9.39 The most important aspects of the information provided by the process of assessment are that it provides

(i) feedback to the individual learner which may allow him to make progress; and

(ii) feedback to the teacher about individuals or groups of learners which can lead to a modification of the experiences provided for them now and in the future.

Both aspects are essential guides for teachers' curriculum evaluation and development.

9.40 In the light of these considerations, therefore, we see the main purposes of assessment at 10 — 14 as being:

(i) to promote the pupil's learning,using assessment as an essential, integral part of teaching and learning;

(ii) to diagnose weaknesses, using the assessment information to decide on appropriate action for remedying them; and to find out strengths, so that these can be extended;

(iii) to motivate by providing feedback about how far he/she has attained the course's objectives, through both formative and summative assessment;

(iv) to encourage learners to better their present performance by giving detailed information about how to improve;

(v) to enable learners to assess their own achievements;

(vi) to help the pupil decide on future courses and consider vocational choices based on fullest information;

(vii) to provide feedback for teachers about the curriculum, so that they can evaluate how suitable its various aspects are for the pupils.

9.41 What the Dunning Report called "the positive contribution of assessment to the teaching and learning process",[17] should be strengthened, helping pupils do their best work in all aspects of the curriculum. Clearly, assessment has a variety of purposes — and a variety of measures is required to serve that range of purposes.

Methods and Approaches to Assessment

9.42 Teachers assess as a natural part of their day to day work. The process of teaching and learning is one in which there is a constant need to question, discuss, respond and make comments as part of a dialogue between the teacher and the learner. The assessment that takes place in this way is rich in information for both the learner and teacher but that information is unstructured and often unpredictable in its source and nature. It is also unlikely to give anything other than a general impression of individual pupils. The H M Inspectorate survey[18] of primary schools in 1980 commented that "teachers usually tried to assess their pupils by observing them over a period of time ... they were shrewdly aware, in general terms, of the capabilities and limitations of their pupils". The danger of relying exclusively on this kind of assessment is that decisions based on it may lead to a poor match between the learner and the learning activity and progression is made more difficult. Children may form impressions of teachers' expectations of them and live up, or more possibly down, to them.

9.43 Assessment, as part of the teaching process, is therefore linked closely to the ways in which teachers teach. These teaching strategies, or modes of teaching, will differ according to the relationship between the teacher, the learner and the activity. They can range from expository teaching in which the teacher takes the major role through to practical and investigative activities in which the learner takes the major role in the task in hand. Some teachers may find it easier to adopt a predominantly expository mode of teaching but inevitably this will limit the kind of information that is consequently available to the teacher and the pupil. A teacher employing a range of teaching techniques will in turn have access to a range of assessment information, and a much fuller picture of the pupil as learner and that is an important reason to use other modes of teaching.

9.44 The pupil too must play a part in the assessment process. Self- assessment is an important part of the process of learning to learn and as such requires increasing attention as the learner develops and progresses through the 10 — 14 age range. An example of pupil self-assessment can be seen in the increasing emphasis on the techniques of drafting and editing in the development of children's writing in both primary and secondary education[19] which encourage the pupil as a writer to become more aware of his purposes and his audience and how successful he is in communicating his meaning. Techniques such as these can assist the teacher as well as the pupils by helping to reduce the feeling that assessment in every curricular area is the teacher's responsibility alone. However, it is important that teachers help children to understand the process of self-assessment, its purpose and the criteria on which they are expected to assess their own work[20].

9.45 Throughout the assessment process the teacher must make use of certain criteria against which the pupil's performance is set and through which judgements are made about the next step in the learning process. These criteria may be ones which the teacher has identified with the pupils in relation to short-term aspects of the work in hand or may be longer term in nature. The teacher may be using general criteria in assessing the pupils' work, e.g. a general description of a skill, and some specific examples of what a pupil might be expected to do. At other times the teacher may be using a list of very specific criteria. In either case the validity of teachers' individual judgements about pupils' progress or development is influenced by the subjective nature of the judgements. However, more explicit statements of criteria can exist within a primary school or in relation to secondary courses, concerning progress or development within certain curricular areas, and these statements can help teachers to make judgements about how valid their own criteria are. Such agreed criteria should be developed by the local planning groups that are set up by a secondary school and its associated primaries as part of the process of curriculum liaison.

9.46 From time to time it will be important to move to systematic assessment, formal and informal. This move will be the result of teachers wishing to focus specifically on the performance of individuals, groups or classes in relation to criteria that have been used in the process of day to day assessment. This may take the form of testing in its broadest sense, including practical activities as well as "pencil and paper" tests. It is however important that any systematic assessment procedure takes account of the need to assess skills and understanding in context. The need for teaching and learning to take place in context has been stressed elsewhere in this report and it is the ability to use what has been learned in other contexts that must be an important basis of the assessment process.

9.47 All of what has been said up to now argues for an assessment process which has as its basis the promotion of effective learning and teaching. It takes as fundamental the need for teachers to use criterion-referenced assessment. Criterion-referenced assessment does not demand the development of sophisticated testing techniques but rather takes as its focus what each pupil has learned. This implies the need for teachers to identify different aspects of the work which are sufficiently important to be assessed separately and to be able to state clearly what would be regarded as a satisfactory or unsatisfactory performance, or good or bad qualities, on each aspect. As a Stirling University research project[21] put it, "criterion-referenced assessment aims at describing what pupils know and can do, in relation to curricular goals, and without reference to the performance of others" and that the principle can be applied in all assessment contexts.

9.48 The effective use of criterion-referenced assessment depends upon the recognition that the criteria must be related to the actual teaching goals rather than much more general goals. Teachers at primary stages and those in certain secondary departments may fear that the emphasis on the identification of criteria will be restrictive and narrowing. However for many purposes fairly general criteria may be adequate. For example, though the first of our desirable outcomes offers the general criterion "Asks questions about experience ...", a teacher may

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specify this differently for different pupils. At one stage it may be sufficient that more and more questions are asked while at others the teacher may encourage a greater precision and focus in the questions asked. Or, in the field of writing, the general criterion that children show an awareness of purpose may be refined into more specific criteria in which the children select an appropriate form of writing for a specific purpose.

9.49 The timing of assessment is also an important consideration particularly in relation to the diagnostic use of assessment. The term diagnosis is frequently linked with remediation and implies a degree of exactness that may be misleading. Diagnostic assessment is largely used to obtain information about learning failure but does not explain the source of failure or the steps that might be taken in trying to help with the problems. Diagnostic assessment by its nature should be concerned with the individual learner. Norm referenced group attainment tests do not provide the kind of information that is specific to individual needs and cannot help teachers to modify the learning experiences that are being offered. All of this assumes that diagnostic assessment is something which takes place after teaching. Diagnostic assessment however can be used much more powerfully before teaching so that the learning experiences offered to the pupils can be built on their present skills and understanding, can help to predict potential areas of difficulty and can take steps to take account of potential problems before they become learning failure. This is not to suggest that learning failure will never occur but it does emphasise that attempts at prevention are potentially much more important than constantly trying to find cures.

9.50 The criterion-referenced approach to assessment and the use of diagnostic assessment especially as a preliminary to teaching and learning underlie the views of learning and teaching that we have proposed earlier in this Chapter.

9.51 It is important, in systematising assessment, not to lose sight of the fact that much of the important learning that takes place will not be adequately represented in the concrete results of the teaching and learning process. It is important to try to find ways of making explicit the thinking processes that are taking place in children's learning. Much of the day to day assessment that takes place in classrooms is through teachers talking to children about what they are doing, and through this discussion misconceptions and misunderstandings come to the surface which can help teachers in their decisions about the nature of future work for these children. There are two important points therefore to keep in mind, (a) pupils learn things we don't include in our assessment and (b) *how* pupils have learned or failed to learn will not necessarily be evident from what they have learned or failed to learn.

9.52 Follow-up discussions of why particular answers have been given can be very valuable. Teachers should also be aware of the value of free-response forms of assessment in which pupils construct answers. Combined with appropriate follow-up discussion these can show a good deal about how answers were reached. The use of free-response forms also allows pupils to offer alternative methods and results, the validity of which can then be explored. It allows scope for divergent thinking and it helps to counter the dangerous attitude that there is only one right answer to every question.

9.53 We would also draw attention to the danger of taking all right answers at face value. Teachers should be aware that pupils can quite often give an expected answer on the basis of an inadequate concept or very limited understanding, with the result that they may fail in future learning. Though time does not permit the exploration of every answer in depth from every pupil, good teaching will include sampling in depth and an attempt to make pupils aware of their own mental processes.

9.54 Recent approaches to assessment such as those developed in research into the practical assessment of mathematics and the practical assessment of environmental studies[22] encourage teachers to develop assessment techniques which make the processes of learning more explicit. They also encourage teachers to identify specific elements in the work and to consider how to make a more systematic assessment of them. There is some evidence that teachers can modify the relatively sophisticated classroom organisation that such approaches demand and can build them into the day to day work of primary classes. We believe that more research and development of this kind should go on in order to help teachers to see assessment as part of their normal activities as teachers.

SUMMARY

A wide range of teaching styles is needed to promote active learning and to create willingness to learn and new interests within contexts in which learners see real life significance. This range includes the use of structured learning sequences (whose dangers and virtues are discussed); the managing and using of learning resources (sources of guidance on which are given); and the sustaining of wide reading across the curriculum. To promote progression and coherence, teachers need to see themselves as part of a team, not least in order to counter the cumulative effect of learning failure. Assessment is part of the teaching process and its positive contribution to learning is stressed, with particular emphasis on criterion-referenced techniques for formative and diagnostic purposes.

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CHAPTER X

RECORDING AND REPORTING

10.1 Up to now assessment has been considered in terms of the purposes that it serves and the methods that make it effective in relation to the child and the teaching and learning process. The information gained by the assessment process must primarily serve to enhance the learning experiences of each individual child, but in the long term, in order to achieve that aim, consideration must be given to the recording of assessment information and reporting to audiences outwith the teacher-child relationship.

Recording of Information

10.2 Much of the information gained as a result of the assessment process is fleeting and impressionistic, particularly in the informal setting. Teachers may take immediate action on the information gained from assessments but it is much more likely that any action taken is the result of reflection and subsequent planning. In order to make the acts of reflection and planning effective it is necessary for teachers to make a record of certain aspects of the assessment process in order to be able to take considered action. It can be argued that the important criterion for record-keeping for teachers is that they are able to act on the information recorded. For the individual teacher this may present something of a problem in that it may not be possible for the teacher to decide on an appropriate response to a situation until he/she has a range of information which bears on that situation. Some information may not become relevant until it is viewed over time, even to the extent that it may be other teachers who act on that information.

10.3 Record-keeping at 10 — 14 therefore has two main components:

(a) within class recording mainly for teacher and pupil use; and

(b) recording which will form the basis of information passed from class to class, school to school and school to parents.

10.4 One of the problems about record-keeping is that the process can almost become an end in itself and completing complex sheets or cards can become an intolerable burden in the busy classroom. The difficulty lies mainly in trying to reconcile the two needs for records to be comprehensive and meaningful on the one hand and simple to maintain on the other.

10.5 Within their own classes many teachers have evolved systems which suit their own classroom needs. These contain a combination of techniques ranging from a simple impressionistic diary in which significant observations may be noted down almost immediately to more systematic records for individuals in relation to various curricular activities. Many teachers organise the classroom activities so that the pupils themselves contribute to the record-keeping through, for example, the compilation of personal records of scores or the selection of examples of work for personal folios. The key to much of the day to day record-keeping lies in teachers asking themselves questions such as

> "What do I need to record?;
>
> Why do I consider these things worth recording?;
>
> What use am I going to make of the information?;
>
> How can it be collected efficiently?"[1]

10.6 These seem to be useful in considering the day to day assessment and recording of information within the classroom.

10.7 Recording for information passing between classes and schools is, by its nature, more structured. In primary schools it is common for class teachers to be required to produce a plan of work for a fortnight or a month and to record at the end of that period the extent to which their intentions have been fulfilled. This plan and record of work can be more or less detailed in terms of specific provision for individuals and groups within the class and the record can form the basis of a summary which goes from class teacher to class teacher at the end of a year. These records are important in terms of ensuring curriculum continuity and progression from stage to stage within the school. Plans and records of work in secondary schools may exist within secondary subject departments but it is desirable that there is a procedure to allow co-ordination between departments with regard to related courses. Opportunities to make links and to build on work done in different subject departments may be lost if this co-ordination does not exist and the result is an unnecessary fragmentation of the pupil's experience. Opinions vary on the extent to which records of individual children should be passed from teacher to teacher because of the effect that they may to have in pre-determining teachers' expectations of individuals. This issue exists both in primary school and between primary and secondary and is taken up more fully in the following section on reporting. However it is important to underline the need for assessment information and records for pupils at risk to be passed to secondary learning support services so that the appropriate action can be taken promptly in S1. The base teacher, as described in Chapter XI, Pupil Care, has an important role to play in this process.

10.8 Record-keeping is, however, only of value if the information recorded is used effectively in ensuring an appropriate educational provision for the individual child and to neglect to record valid information would make this much more difficult. Clearly, the definition of "valid" is controversial. Teachers may be reluctant to record social or attitudinal information because that information is based on subjective views and it may become a self-fulfilling prophecy. One solution is to reduce the amount of of information recorded and to make it clearly based on evidence and work-related. It should indicate possible "educational" action and not simply apportion blame or excuse inaction. Cognitive records are often more readily agreed to but even these are not entirely meaningful when divorced from the context of the classroom activity that gave rise to the information.

> "Marks, grades and comments which are interpreted without reference to the teaching contexts from which they have been derived are not likely to give much idea to anyone about what a child can actually do, nor do they offer much guidance to the teacher as to whether previous teaching was appropriate or on what now needs to be done."[2]

10.9 These issues are brought into sharp focus when transition arrangements from primary to secondary are considered. Clearly, an important part of the process of primary-secondary liaison is the passing of information from school to school. Much of the attention of schools in the past has been concentrated on this aspect of the primary-secondary relationship in terms of reporting as the following section shows. However it is in the context of the development of effective arrangements for curriculum continuity that issues about the nature of the records kept are perhaps best set and discussed.

10.10 Within the arrangements for curriculum liaison between and among schools it is hoped that groups of teachers will be engaged in the discussion of aims and programmes within certain curricular areas. Part of this discussion will inevitably focus on the criteria which will give an adequate profile of each pupil's development and achievements. Such discussion could usefully lead to a consideration of the relevant assessment processes, the nature of the records kept and the basis for information passed from school to the home and from primary school to the associated secondary.

Reporting

10.11 For many years secondary schools have advocated a "fresh-start" view of primary-secondary transition because this allowed pupils to begin a new phase of education unencumbered by previous views of them as learners and as individuals. This view is based, to some extent, on the awareness that detailed information on individuals and their performance can result in certain expectations being formed by teachers and self-fulfilling prophecies about future performance being formed. We have argued that continuity and progression in the learning experiences of children are crucial; we believe that these can be achieved while retaining for individuals the feeling that a new beginning is possible. It is against this background that any discussion of the reporting of assessment must take place.

10.12 Assessment information has several audiences through the process of reporting. Pupils, parents, other teachers are all audiences but the purposes of reporting may vary in each case. For the pupil, assessment information is important, as suggested in the previous sections, in helping to improve the learning process. For teachers it is important in evaluating the curriculum and in designing appropriate learning experiences. For parents it is important to have information about their children's progress. This is important not only in terms of

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professional accountability but also so that parents can play their part in their children's learning. It is, however, worth noting at this stage that there can be a tension between the use of criterion-referenced assessment and reporting to parents or other teachers. Criterion-referenced assessment produces information which is relevant to the individual child in relation to a specific task or activity for which the criteria for success have been identified. If this criterion- referenced information is simply added together, then it is being used wrongly. Aggregating information from, for example, a series of diagnostic tests in order to award a single grade based on that aggregation misuses the information. The introduction of norm-referencing through the reporting process is a danger that schools must be aware of as something that may distort the use of criterion-referenced assessment in the learning and teaching process. Parents may well wish to have some indication of how well their children are progressing in relation to their peer group (see 10.16 below) but this may be best dealt with through discussion.

10.13 The main formal means of communication between the primary school and the home is the Pupil Progress Record (PPR) which was developed in 1969. The report forms have been criticised by teachers and these criticisms are summed up in the COPE *Position Paper*[3] as

(i) discontent "over the relatively non-specific nature of the report form and the mismatch between bland terms such as 'satisfactory-unsatisfactory' and the 'complex teaching and learning process'". The COPE paper criticises terms such as "uncertain of process", which cannot give helpful feedback to parents, who often expected norm-referenced test results and summative assessment information; and

(ii) the failure of the PPR to "present a coherent picture of the primary curriculum", implying instead a "basics and frills" view of the curriculum, in which the expressive arts may inspire an interest or special aptitude but which are less important than language and mathematics.

10.14 We endorse these criticisms of the primary report form and feel that similar criticisms of the official secondary report form might be made. Most secondary schools have developed report formats more specifically related to each school's situation. We therefore recommend that any revision of the primary PPR should be extended to include a revision of the secondary report form at the same time.

10.15 Legislation on pupils' progress records has not been fundamentally altered since Regulations which required the record to include, for example, "the results with dates of any objective or diagnostic test administered to the pupil" — these probably refer to standardised tests or those given for child guidance purposes — "a note of any factors adversely affecting the pupil's educational capacity or attainment" and "where appropriate, information about the pupil's emotional and social development". This record is the continuous log of a pupil's progress throughout school and goes to his next school if he transfers; it is not usually open to parents, although teachers may draw on one set of information both to add to the progress record and to write the report form for parents.

10.16 The 1981 Act required each school to inform parents about its organisation and processes, for example, through a handbook. The view is often expressed however that the school handbook is not an effective means of contact with parents. It is clear that much more must be done to ensure that there is effective contact between teachers and parents as part of the wider process of liaison between school and home. It is valuable for parents to know about schools' curriculum and assessment approaches, guidance, teacher aims and arrangements etc. and to receive reports which describe their own children's attainments and behaviour. However, concerned parents often want to know more than this, and it is arguable that all parents should be entitled to know at least the answers to these questions:

- what is the syllabus for this part of the course?
- what are the school's aims and objectives in this part of the course?
- how far has my child achieved the hoped for learning outcomes?
- how does his progress compare with the progress of other children?
- how can any underachievement be explained?
- how can I help him progress further or achieve better?
- how does his assessed level of achievement affect his course?
- is my child an active participant in class and extra-curricular activities?

10.17 Many of the above questions can only be partially answered by a school handbook or written report form, no matter how well designed. The process of discussion between teachers and parents is essential if the questions about individual children are to be answered. The report should be seen in this respect as an essential part of the two-way communication between two groups, both concerned with educating a child. Parents could participate by adding comments to the report form and answering questionnaires with open-ended items. Framing the report for parents involves communicating with people who may vary greatly in their interest and knowledge about education but who will very rarely lack interest and knowledge about their children.

10.18 The first concern of the school is to report on the assessment of children as learners in school. It may however be necessary, in accounting for some learning failure, to refer to the social circumstances of the children. It has been suggested that it is necessary for teachers to distinguish between aspects of assessment and reporting for which they have primary responsibility, that is those aspects related to learning and teaching, and those in which they are laymen. Members of staff concerned with guidance may, however, need information from beyond the classroom in order to undertake pastoral care and this information requires very careful treatment. The issue of confidentiality of such reports is a matter of such importance that the Scottish Central Committee on Guidance [4] has highlighted the need for investigation into this aspect of record-keeping, especially since the trend in modern society is towards more open reporting.

10.19 For curriculum liaison to be meaningful close attention must be paid to reporting between primary and secondary schools. Reports however only become central to primary-secondary co-operation if they help to promote effective liaison. Good liaison should promote progression in pupils' curriculum and increase teachers' understanding and competence. Information about the work and experiences provided by the school and what pupils have learned in previous classes will be valuable in enabling teachers to develop a "progressive" educational experience for the pupils, rather than merely "continuity and linkage" over the 10 – 14 years, important as both concepts are. The emphasis in trying to achieve progression is on the pupil's learning. To emphasise continuity and links without considering progression is to miss an important feature of the educational process that is taking the learner from where he is and helping him to move further on.

10.20 While primary teachers do report on the level of skills in language and mathematics which individual pupils have attained, they are often reluctant to "condemn" a pupil or raise high expectations about him. Some prefer to tell secondary staff about pupils' behaviour (rather than write it down) provided they have confidence in secondary teachers. As with records, effective reporting is best discussed in the context of curriculum progression and shared aims about helping pupils to have the best possible educational experiences. This is especially important when the associated schools might interpret specific grades (A – E, etc.) differently, or pass no information about certain curriculum areas, such as environmental studies, which could include attitude to research, finding and using information, recording and other skills.

10.21 Teachers in primary schools feel strongly that their work in providing oral and written information to secondaries should be put to use in helping their children to have an effective secondary experience. The problem for secondary teachers is that there is a danger that they will be unable to cope with the amount of information that is made available to them. If teachers are given too much information it is almost inevitable that they will be unable to read it and make sense of it without having met the children to whom the information refers. This makes the handling of information within secondaries very important and schools must have clear structures so that assessment information is stored, possibly by learning support services, and is easily accessible to teachers who require it in order to match specific learning experiences to individuals' needs. Secondary schools must however also make provision for guidance staff to identify children who have problems which will need immediate attention, especially problems of physical and mental health.

10.22 Effective curriculum liaison should ensure that secondary schools know about primary schools' curricula and resources and make teachers confident that their teaching is building on work at the earlier stages. Given what has been said about the dangers of self-fulfilling prophecies and overloading teachers with assessment information, it is important for schools to decide upon the nature, amount and availability of information that is passed. Many primary schools claim that they receive no feedback about the use and effectiveness of their reports but a system of curriculum liaison which included decisions about the nature of reporting should, through the normal processes of discussion and review, provide this information for primary schools.

10.23 In one of the most comprehensive examples of exchange of information, one secondary school and its associated primary schools exchanges P7 and S1 textbooks, worksheets and project plans, to provide a background for teachers to understand reports and to avoid unnecessary duplication of work. The secondary gives primary teachers S1 subject syllabi, while primary head teachers report their range of subject matter and methods. This initiative involves pooling information and course materials in a primary/secondary "reference library" for all associated schools, going beyond the exchange of school handbooks which could include areas and topics covered in each year. Folios of P7 pupils' work can also be illuminating for S1 teachers if they contain representative work from each aspect of the curriculum. (One difficulty is that primary teachers may prefer to send only the best of each pupil's work). In addition, visits by secondary teachers to primary classes enable them to put syllabus information from P7 teachers into context, when they observe primary colleagues' methods and grouping.

10.24 Where pupils change schools, either through moving house or through their parents' choosing a secondary school in another district, their progress report must (by law) be sent to the new school; but there is a strong case for passing more than the bare minimum and sending as full a report as that primary school would send to its associated secondary school, for example. Indeed in these cases more information should be sent than normal as there is more likely to be curriculum discontinuity. Thousands of children every year transfer schools in this way, sometimes to other parts of Britain, and if the accounts of their previous curriculum and achievements are slim documents the receiving teachers have more difficulty in preparing a progressive experience for them.

10.25 Reports are also helpful to teachers within the same school, especially to new members of staff, and also to those taking a class temporarily or who are unfamiliar with individual pupils. Here the report would often supplement informal written (or oral) comments about pupils passed by previous teacher(s). It is useful to teachers to know what pupils and parents have previously received as feedback about school performance, since reports help shape pupils' attitudes to their own work and schooling.

10.26 Computer assisted reporting is still at a very early stage of development. A recent example has involved the use of the computer in a number of Renfrew schools. Initially primary and secondary teachers from three districts worked with advisers (on language and mathematics working parties) to produce comment banks suited to the curriculum of three secondary schools and their associated primaries. Individual teachers choose the comments most appropriate to an individual pupil, from a range of comments, and the pupil's profile or report consists of these. Once a year primary teachers complete a matrix by writing in numbers, corresponding to the chosen comments in each category within language and mathematics. Secondary teachers complete a subject department matrix whose range of comments and categories were decided by the department in consultation with other senior staff. The matrix is converted into the pupil's profile by Strathclyde's mainframe computer, and each school can then add a cover and written remarks, attendance totals etc. if required.

10.27 Teachers generally agree that the profile was a great improvement on the 1969 pupil progress report. It shows what an individual pupil can and cannot do, and how apparently average pupils differ, through detailed comments. The profile is very informative and reduces idiosyncratic remarks in assessment. Those completing it also believe that the profile has valuable effects in motivating pupils to do better, both because it is a valuable basis for discussion with pupils, and because it keeps their dignity by making positive comments wherever possible. Parents and secondary teachers also receive far more detailed information about an individual pupil's performance than with previous reports. Parents' reactions are generally favourable, but some find it difficult to interpret certain terms, especially if they missed parents' evenings when teachers have explained the terms. It is important to remove some of the impersonal nature of the computer generated profile by incorporating illustrated covers which are unique to the school. As with all reports, it is highly desirable that two-way communication about the pupil is possible; parental feedback in this case is encouraged by incorporating a questionnaire/reply slip. Some parents, however, still wanted to know where their son or daughter stood in relation to other pupils' performances.

10.28 Most difficulties which primary teachers find with the profile seem to arise either from uncertainty over how to choose the most appropriate comments, or from factors which often affect transfer of information to secondary schools — such as not wishing to condemn pupils or exaggerate their attainments. There are, however, booklets offering guidance on completing the profile and interpreting the comments, and when the scheme was started several introductory meetings were held for all the teachers involved. The computer facility allows flexibility in changing comment items, and each secondary department has changed certain items in its bank every year. Teachers are able to choose the assessment and recording approach which suits their pupils and subject area best.

10.29 The Renfrew experience suggests that it is important for senior staff to work with teachers who are involved in producing the comment banks, explaining what phrases mean and what kind or level of performance justifies a specific statement.

10.30 Provided the work on computer assisted reporting does not limit teachers but fulfils its initial promise of providing a flexible response to reporting needs, we believe that further work on it should be encouraged.

SUMMARY

Part of the process of developing effective curriculum liaison should be efficient passing of information from primary to secondary schools and from class teachers to their school colleagues. For example, learning support services should receive information about pupils at risk as quickly as possible, so that in S1 they can act on this and guidance teachers can identify children with immediate problems. All the information teachers record about pupils should be based on evidence related to their work and should suggest educational action. Secondary schools should have procedures which encourage departments to co-ordinate their record keeping and work plans. Where the audience for a report is a school outwith the associated group, it should receive as full a report about the pupil as would the associated school. Every school should ensure effective contact with parents, as part of wider home-school liaison and of the reporting process. There should be further work on computer-assisted reporting.

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CHAPTER XI

PUPIL CARE

11.1 A policy for pupil care is a necessary part of schooling because children differ not only in academic attainment and needs but also in emotional, social and medical needs. This is especially true at 10 – 14. One of the main reasons for the attention that has been given in the past to primary-secondary liaison has been the desire to make the transition from the primary school to the large secondary school as smooth and as non-threatening as possible for the individual pupil. The Pack Report[1] stressed that the majority of pupils experience "no undue problems" in the process of moving from the small to the large school and noted that most schools "now realise the importance of taking special measures to help pupils to adapt quickly to their new surroundings". Pack nevertheless recognised that some children do not adapt quickly and it is therefore important to give careful attention to the structure of a system for pupil care over the transition period.

A POLICY FOR PUPIL CARE IN THE PRIMARY SCHOOL

11.2 Pupil care in the primary school is principally the responsibility of the class teacher and it is this relationship between children and one teacher over an extended period of time that is one of the main strengths of the primary system. It is true that if there are problems in this extended relationship, then difficulties can be caused for individual children but this is the exception rather than the rule. The Pack Report suggests that one of the advantages that primary schools have over secondaries is that "school organisation allows simple relationships to flourish because primary schools are usually small ..."[2] and it is these relationships that are at the centre of the pupil care system.

11.3 Pupil needs in primary are principally identified by the class teacher whose contact with the child over an extended period can alert her or him to behavioural, social, medical or learning problems. Information passed on by previous teachers and outside agencies such as the school doctor or the Social Work Department also help to identify pupil needs. The best source of information is, however, the parents, and the need for good relationships between the school and the pupils' homes cannot be overstressed. The role of the head teacher in all of this is to establish clear procedures and routines that allow this information to be managed and used.

11.4 The need to establish a routine that is understood by staff, despite the "simple relationships" suggested by Pack, leads many head teachers to devise a school policy for pupil care in the primary school that is known to all staff. The need for a policy on pupil care to be written is strong because of the number of important aspects of such a policy. Schools often have to respond to serious issues — such as solvent abuse or child abuse — and the support of a positive policy statement for teachers on such issues within the wider context of pupil care is highly desirable. The tendency otherwise is to respond to major care issues as isolated crises. Whether or not such a policy statement should be written is affected, for example, by the size of school and number of staff; good pupil care can take place without anything being written down. However, even in small schools, the benefits of a written policy for reference and support are likely to be considerable. The main features of such a policy in primary school might be as follows:

(a) *the class teacher*, because of her unique opportunity to observe children in a variety of situations and to build up a relationship with them is responsible for

  (i) identifying needs

  (ii) referral, where appropriate, to AHT/HT

  (iii) making appropriate provision for the child in the classroom

(b) *the AHT or learning support specialist* (where available) is responsible for

  (i) liaison with the class teacher about pupil assessment

  (ii) advice for class teacher on classroom management of pupils with specific difficulties

  (iii) help for class teacher in the practical application of advice from outside agencies

(c) *the head teacher* is responsible for

  (i) establishing and implementing school policy on curriculum and methodology which ensures that appropriate provision is made for each child

  (ii) establishing constructive home-school links

  (iii) defining and implementing school policies for children with special needs, by liaising with class teachers and parents, and by making referrals to specialist agencies where appropriate

  (iv) liaison arrangements with secondary school.

DISCIPLINE

11.5 An aspect of pupil care affecting both primary and secondary schools is the question of discipline. It has been argued by teachers that children are more difficult to handle at the 10 – 14 stage now than they used to be. It is difficult to establish the validity of such a general statement and to separate out the complex set of influences that determine how pupils behave in school. Indiscipline may be the result of conflicting expectations placed on children as a result of differences between home, community or school value systems. It may be the result of the influence of peer group attitudes and values which discourage an active and interested involvement in the work of the school. Contributory factors however may be related to curriculum or methodology and the perceived relevance of the curriculum by children. Children's interests and abilities will also affect how they behave. Much of what is said about discipline problems, particularly at S1 and S2, is related to teacher expectations of how they believe children ought to behave in class. Where teaching and learning is regarded as an active process then the expectations of children will be for them to be active. However, when children move from teacher to teacher, both within the same school and between schools, and there is inconsistency in the teachers' views of what constitutes order in the classroom then problems of adjustment and consequent problems with indiscipline can occur. The COPE *Position Paper*[3] suggests that order in the classroom "rests upon a common acceptance of a system of rules" and that "a substantial part of the work of teachers is concerned with developing and negotiating a set of rules, and an important part of children's learning is in fact concerned with learning the rules for learning". What constitutes "discipline" is therefore different when based on a rule-system which supports active learning and teaching from when it is related to a view of teaching and learning which assigns the pupil to a largely passive role. Many children transfer at 12 from a primary classroom in which the rules for active learning are well established to a situation in S1 where a variety of classroom rule-systems exist. Much of the indiscipline that is perceived in S1 classes may be related to expectations of behaviour being placed on children which arise from a different view of the learning and teaching process. Moves towards more active methodologies which are being encouraged at S1/S2 must have an associated move to negotiation, understanding and acceptance of new rule-systems by both teachers and children, or problems will occur. They must also be accompanied by an attempt to move away from the fragmentation of the day into short periods and frequent changes of teacher that make more difficult the development of methodologies that involve and motivate the learners.

11.6 We are aware that there is a minority of pupils whose disturbed and consequently disruptive conduct cannot be attributed to inappropriate curriculum, teaching methods or a difficult relationship with a particular teacher. The presence in the classroom of one or two such pupils on an "off" day (when, for example, disturbed behaviour has been triggered off by an incident at home or elsewhere outside school) can frustrate the efforts of the teacher and come close to destroying learning opportunities for the rest of the class. To ensure that the majority of pupils are not disturbed in their work, it may be that education authorities have to consider more attentively what support they can provide for schools in dealing with excessively disruptive pupils. We suggest that fresh consideration should be given to the recommendations of the Pack Report[4] with a view to ensuring that disruptive pupils can be taken quickly from the scene of their misconduct to allow for a period of "cooling off". This immediate resource needs to be backed by the guidance system of the school, which in turn should have good communications with, and the ability to draw support from, both social work and child guidance services. Persistent and serious disruptive behaviour is likely to have causes beyond the ability of the school alone to deal with.

11.7 A clearly defined school policy on discipline is necessary and this should be the basis upon which an understanding of the terms "order" and "discipline" in relation to learning and teaching are developed. It is also desirable that such a policy should go beyond the association of discipline with various sanctions and stress the positive steps that can be taken to prevent indiscipline. The requirement already exists for school handbooks to contain a statement on discipline but, as some parents may not consult the school handbook, each school should, in addition, make its policy on discipline widely known, through a statement specifically concerned with that matter, and through discussion in school council meetings and parents' evenings.

PARENTAL INVOLVEMENT

11.8 The role of parents in relation to all aspects of their children's education, including discipline, is of great importance. The COPE *Position Paper*[5] stresses the importance of the relationship between the home and the primary school in making the most of each child's potential and this is equally true for the secondary school. COPE[6] encourages primary schools to adopt a more open attitude to parents so that they feel part of the school community rather than outsiders, a view also proposed by Pack,[7] as a means of combating truancy and indiscipline. Primary schools are also encouraged to take active steps to help parents to understand the school's curriculum and activities so that they can in turn understand the expectations that the school is placing on the children at various stages[8]. Experience tends to suggest that this activity is more successful at the earlier stages of primary education than later and it is interesting to ask why this is so. One factor may be that as children grow older a mystique grows about the curriculum of schools and many parents are less keen to try to understand what is involved. There may be some truth in the view that the curriculum becomes more complex and difficult as children progress to the later stages of schooling but, certainly between the ages of 10 and 14, much can be done by both primary and secondary schools to make the curriculum less of a mystery to parents. Many parents who have been encouraged to visit their local primary school find it more difficult to do the same when their children move to the secondary school. The size of many secondary schools may be a major factor in this but it is important for every school, primary and secondary, to encourage their pupils' parents to visit the school and talk with teachers. This is especially significant at times when pupils are coming to terms with new situations and when appropriate responses are essential for them to make full progress, for example in the first term of S1 and when choosing course options for S3.

11.9 Recent studies[9] suggest that parents want more detailed advice on how to help their children — especially at the time when they receive a school report. They are ready to change their own attitudes, if necessary, and to influence their children to work more effectively, if they know how to act on those wishes. Meetings between parents and the class teacher or class tutor could be particularly productive soon after reports are issued, and when pupils must choose options in S2. The class teacher's or tutor's extensive knowledge of one group of pupils has to include knowledge of, and dialogue with, their parents. A report then becomes a focus for teachers and parents, to help a pupil gain the fullest value from his learning experiences, and acts as a two way communication between home and school.

11.10 School councils, including parents and teachers from the associated schools, should play an important role in publicising the value to pupils of parents' regular meetings with teachers, and in explaining how parents can help children in specific ways.

TRANSITION

11.11 An important element of the structure for pupil care is the preparation that takes place for the transfer of pupils. The Strathclyde Region *Report on the First Two Years of Secondary Education*[10] makes a number of very practical suggestions in its *Guidelines on Transition Arrangements* (see Appendix D). Children from primary school do need to be prepared for the change of building and the change in organisation that is about to take place. Much can be achieved by means of the arrangements made for continuity between the associated primaries and the secondary school, in both the primary and secondary buildings,in working with P7 children. Former pupils of the primary, now in secondary school, can also help in the preparation for transfer by means of visits, giving talks, writing newsletters in order to help primary pupils to form a picture of the secondary. Parents too can be helped in the preparation for transfer by receiving full information about the secondary school and, as suggested above, by being encouraged to visit the secondary school perhaps during the P7 induction period.

INDUCTION

11.12 It has already been suggested that for the majority of children the move from primary to secondary school will be something that is taken in their stride. Nevertheless, a well thought out induction procedure is something that can be helpful for most pupils and reassuring for those who have real fears about the change of school.

The process of induction has a number of elements:

(i) *Information transfer from primary to secondary*

This has already been referred to in the chapters of the report dealing with assessment, recording and reporting. Schools must have appropriate procedures for the gathering and transfer of information which makes that information meaningful to secondary staff and it is vital that secondaries have structures to make information available to those who require it so that the individual's needs are catered for.

(ii) *Communication with parents*

We recognise that for many parents, transfer from primary to secondary is a time of considerable stress. It marks a significant staging post in the maturation of their child; it requires a step into the "unknown" larger community, perhaps necessitating significant changes in their child's travel and separation from home, and they are faced with making a positive decision on their child's future education via the placing request. All sections of the education system should endeavour to minimise these stresses by maximising their communication with parents.

Parents are naturally anxious to receive an insight into their child's educational prospects in secondary school and wish to know what is being said about their child to the secondary school. Primary schools generally hold parental interviews in P7 with these objectives in mind and, suitably timed, the effectiveness of these interviews can be increased. Parental interviews should be held late in the first term of P7 and also in April or May. At the first interview the topics of secondary school choice and transfer arrangements should be included with secondary school handbooks and brochures, and placement request literature, being available for inspection.

The April-May meeting should include more detailed discussion of the transfer and induction arrangements.

Wherever possible parents should be invited to visit the secondary school at the same time as their children.

Secondary schools might consider the benefits accruing to parents from holding an additional daytime meeting, during the children's last term in P7, as part of their overall programme.

Although most parents choose to send their children to the secondary school in whose catchment area they live, they have the right to choose to send their children to a different school. There is, however, a need for greater assistance for parents in gaining access to the relevant information upon which to base their choice. Local authorities could do more to bring such information to the attention of parents, and might usefully include poster displays in primary schools, community centres and public libraries and ensure that as wide a range of secondary school literature as possible is available for consultation in primary schools and local libraries.

(iii) *Staff visits to primary and secondary schools*

Intervisitation between primary and secondary staff is regarded as an important part of the process of curriculum liaison. It is also part of the process of induction in that it provides the opportunity for teachers who will play a large part in the early days of the pupils' S1 experience to begin to establish contact.

(iv) *Pupils' visits to secondary schools*

It is fairly common practice for P7 pupils to visit the secondary school in May or June in order to see the building in which they will spend their time in the very near future. Visits may be short, half a day or one day, and it is difficult to see how such a short visit can do much to acquaint children with the physical aspects of the building, far less the educational experiences that they will have there. Short visits may simply confuse children and, if this aspect of induction is important, then it is perhaps preferable to attempt to make it a more extended period. Some schools, after timetable changes in June, involve primary children in the secondary for periods of one or two weeks. Children from different schools can meet in the classes that they will be in from the following August and can follow a timetable similar to that which they will have in S1. It can be argued, however, that this kind of process simply moves the difficult phase for some pupils to late P7 rather than S1 and without some sensitive planning of the activities and the involvement of both primary and secondary staff it is unlikely that there will be major benefits for the pupils. It is possible that the development of initiatives in curriculum continuity might make this part of the induction process more effective than has been the case at present.

In a small number of cases the induction period extends until the September of S1 when contact is made with the primary school about the progress of the new S1 pupils and positive steps can be taken if there are any unexpected problems.

A STRUCTURE FOR PUPIL CARE IN THE SECONDARY SCHOOL

11.13 The structure for pupil care once the children have transferred to secondary is through the *guidance system* which has been established for some time now in Scottish secondary schools. No set formula can be laid down for guidance since schools vary so much in situation, rolls, catchment areas and staffing. It is up to the management team to set up a system that best serves all the needs of all the pupils. The role of the promoted guidance staff however is a key one and one which they have been increasingly trained to undertake effectively, given resources, opportunities and goodwill from the management team.

11.14 The Scottish Central Committee on Guidance[11] has identified specific guidance objectives which, if achieved, would ensure that every pupil in secondary school would be known "personally and in some depth" by at least one member of staff. The moral, social and intellectual development of the pupils; the involvement of the home and outside agencies; the presentation of opportunities to achieve responsibility would all be achieved within the school as a caring community. The report of SCCG was at pains to stress that it was offering advice on how to build a caring community,not simply putting forward an idea or a set of values.

11.15 The SCCG Report, however, also introduced a new concept — first level guidance teachers who would be encouraged "to develop the pastoral potential of their role". Although these teachers would be unpromoted, they should be trained, supported and managed by promoted guidance staff. The first level guidance teacher with daily contact with a set group of pupils would be ideally placed to get to know the pupils and their interests and problems. The daily contact should enable the teacher to develop informal contacts with the pupils and a sensitivity to the pupils' view as well as providing an opportunity to interpret the school's views. The Report stresses that it does not wish to diminish the pastoral role of the subject teacher.

THE CLASS TUTOR

11.16 We have taken this view of the first level guidance teacher and combined it with the belief of the Committee on Special Educational Needs that there is a need for a structure of pupil care which can give early support to pupils with learning difficulties. COSPEN recommends the provision of "retrieval time" for children so that progress and problems can be discussed across the curriculum. COSPEN believes that an arrangement whereby a teacher with designated responsibility for the pastoral care of a given group of pupils and who could provide the means of early identification of pupils with learning difficulties would provide the natural extension of the role of the class teacher at primary in terms of pupil care in its widest sense. A teacher undertaking such a role within the secondary school might be regarded as a base teacher or "class tutor".

11.17 The fragmentation of the secondary pupil's timetable, even under suggestions that we put forward and in spite of attempts to restrict the number of subjects studied by pupils in S1 and S2 by various means, can still involve pupils with a number of teachers making the development of meaningful relationships difficult. Some teachers may see pupils so infrequently that they do not know the pupils well. The promoted guidance staff will still be dealing with numbers that make it extremely difficult to know the pupils well. Ideally, therefore, one teacher should be in a position to get to know a group of pupils — a tutor group, register class or whatever — very well; ideally too that relationship should continue throughout the pupil's school life although one must be realistic about this taking into consideration staff changes over the years. This teacher, besides seeing the group every day, probably at the beginning of the day, should, if at all possible, also teach that group so that the social and curricular aspects are joined in that one teacher.

11.18 It is essential that the knowledge that the class tutor gains of the pupils' difficulties, problems, thoughts, views, should be speedily passed on so that help, if necessary, can be given to the pupil. The position of the tutor in the school organisation must, therefore, be considered carefully.

11.19 The tutor is one of a team administered and organised by the promoted guidance teachers and that team must be given opportunities to meet to discuss situations that come to the notice of the tutor so that problems may be dealt with "higher up" if that is necessary. As tutors become more experienced and more knowledgeable about their pupils, it may be possible for any advice or help to be given on the spot either by her/him or by the class depending on the circumstances. One advantage of a group remaining as a group with one well-known and interested adult would be that the group itself would develop a corporate sense so that pupils would help pupils, and past experiences and knowledge could be brought to bear on problems. This would also go some considerable way towards encouraging pupils to become less teacher-dependent.

11.20 The position of the tutor should be an all-embracing one — subject teacher, register teacher, first link with the school system, first contact point with the parents, initiator of, or participant in social activities, outings, parties and helper in, or organiser of, social or community work undertaken by the school. The importance of the role is very great, and for that reason it is often argued that only specially gifted teachers who relate particularly well to pupils should be asked to take on this job. We admit the force of that view but cannot accept its implications. This role is one which all teachers ought to be able to undertake: it is, we believe, one which all teachers can learn to undertake; and we believe that the job itself is an important element in staff development, encouraging as it does an overview of the pupil's whole school experience and an insight into the pupil's view of the school. While, then, it may be politic to introduce such a system gradually and with at first carefully selected or volunteer staff, we firmly recommend that the policy should be towards the involvement of all staff except the senior management team. We believe, on balance, that principal teachers should participate as class tutors in spite of the problems this can create. They are problems that have been overcome in some schools, and can be overcome in others.

11.21 It is essential that class tutors should be thoroughly briefed on what is expected of them. The team approach must be carefully thought out and school management must make the resources available to the teams as well as facilitating the entire scheme by carefully thought out timetabling. Priorities must be decided on; if it is accepted that tutors are to be established in a school, the issues and difficulties must be faced up to and solved so that the staff and pupils involved may gain the maximum benefit from the system.

11.22 The existence of tutors in a school will have other fortunate effects. As part of the co-ordinating teams suggested elsewhere in the report, they will have an unquestionably beneficial influence on curricular matters, an influence that can be used to overcome curricular difficulties or deficiencies that their work will reveal; this fits in well with the concept of a "whole school" philosophy affecting curriculum, guidance, assessment — indeed all aspects of a pupil's education. The tutor will also figure largely in the passage from the primary school to the secondary. It is up to management to devise systems which allow him/her to meet the group before they become pupils of the secondary school – direct meetings or letters to parents explaining the situation can prove helpful and valuable in this respect.

11.23 A view of guidance as something that must permeate every aspect of education in its widest sense takes on board very easily the idea of a class tutor, since the class tutor and the first level guidance teacher are both now the same person, a very strong force in the educational process and a natural follow-on from the single primary teacher who has looked after every aspect of the child's education until the transfer to secondary school, a transfer that is made easier, more pleasant and far less fearsome with the class tutor/first level guidance teacher there.

SUMMARY

Every school must have a policy for pupil care, to cater for their pupils' varied learning requirements, emotional, social, and medical needs. Schools should have a written policy statement which clarifies the responsibilities of teachers, parents, and outside agencies, as well as setting out procedures for dealing with issues (such as child abuse) set within the wider context of pupil care. School policies on discipline should be related to what teachers expect of their pupils, and schools should place great importance on developing good relations with parents, explaining fully the goals of their curriculum and school activities at 10 — 14. In secondary schools the "base teacher" or "class tutor" should come to know a group of pupils very well and meet them each day, as well as teaching them, so that he/she can provide pastoral care and support for pupils as learners in all aspects of their school work. The tutors would form part of a team organised by promoted guidance staff and contribute to guidance as a permeator of each pupil's education.

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CHAPTER XII

PARTNERSHIP FOR PROGRESS

12.1 In previous chapters we have set out our view of the goals of schooling at 10 — 14, of the principles of learning and teaching, of the nature of the curriculum and ways in which it may be structured. How can these views be given reality for teachers and pupils in schools?

12.2 We believe that this can be achieved gradually over a period of time by sensitive management operating within each group of schools where education 10 — 14 actually takes place. Management, we believe, has to be located at this point, principally because it is only there that all factors, both human and physical, can be fully taken account of. These factors vary from school to school and it would be unwise to expect every institution to respond at the same pace and in the same way.

12.3 In addition, we have four further major reasons for urging the importance of management at this point and for this stage.

12.4 First, there are the varied relationships involved in the 10 — 14 stage. These relationships exist between individual teachers who do not all share the same educational background and experiences; they exist between departments of the secondary school with a tradition of considerable autonomy; they exist between separate institutions: between the secondary school and its associated primary schools and between the primary schools themselves. The network of relationships formed is a very complex one, and it will not support children as they move through this stage of their education unless there is careful and conscious management to this end.

12.5 The second reason for giving importance to a management structure is the complexity of the issues. Within the context of an overall philosophy bringing a group of schools together into a partnership for the progress of their pupils, there is, as we have suggested in Chapter VIII, the need to examine all that is taught and learned, when and who teaches what, how the teaching is best done to achieve agreed ends, to say nothing of the continuous evaluation of what is done and the assessment of individual children. Interpenetrating these curricular issues are matters to do with supporting the individual learner when he has learning difficulties — matters of "remedial education" — and of recognising the individual as a social being — matters of guidance or care.

12.6 Thirdly, we believe that curriculum development is best managed by those most closely involved in the teaching. This view, set out in Chapter VIII, is supported, not only by our own observation of work in various school-based enterprises, but by a significant body of experience both in Scotland and elsewhere.

12.7 Fourthly, given the complexity both of relationships and issues, we believe it is entirely impracticable to face schools with demands for instant radical change across a wide spectrum of their activities. What is needed is a facilitating device to enable groups of schools to move gradually towards curricular reform. Without such an arrangement we think it unlikely that schools will come together, agree on a curricular philosophy and on curricular design for the whole period to ensure continuity of education for all.

12.8 From these considerations one necessary feature of management becomes abundantly plain. It must be collaborative in nature. It is not simply that different institutions are being called together to harmonise their practices; it is also that different skills from within these institutions must be drawn upon, and that competing interests within them need to be reconciled.

12.9 A less obvious feature should perhaps be stressed. The term "management", in the context of schools, is associated most readily with organisation and administration. Let it be clear then that our proposals are intended to refer to *management of the curriculum*. Our aims for it are that there should be provided for pupils the most effective learning experience that can be arranged. This emphasis, of course, does not exclude "organisation and administration". On the contrary it places these considerations in proper perspective. School organisation and administration exists to serve pupils as learners, and to serve teachers as facilitators of learning.

12.10 The emphasis we have given to collaboration and team work led us, as we noted in Chapter VIII, to prefer the term *co-ordinating team* for the group of teachers responsible for curriculum over the 10 – 14 years.

12.11 The importance of locating that responsibility within the partnership of schools itself does not mean that the education authority has no part to play. It has a crucial role which we explore later in this Chapter.

The Basis in Practice for our Proposals

12.12 It is important to recognise that the proposals we make for management and co-ordination are not based primarily in abstract considerations. They are, on the contrary, rooted in successful examples of curricular liaison which we were given the opportunity to observe and monitor. In no single instance did we find an exact parallel to the model we have come to prefer, however,and we think it useful to rehearse some of the elements in our thinking which led us to our conclusions.

12.13 After a year's field work and observation we had constructed a statement of the conditions which appeared to underlie successful practice in establishing curricular continuity and coherence within a group of schools, at least as far as some curricular areas were concerned. These were:

(i) That commitment at local authority level be given to the undertaking though this commitment may take varied forms.

(ii) That the development is undertaken by the staffs of the schools involved rather than by an outside agency. The role of "outsiders" (e.g. local authority advisers, college of education staff) is to support rather than to lead.

(iii) That groupings of staff to achieve curricular liaison, in defined areas, be given a clear remit involving the making of a *product*, e.g. guidelines and/or teaching materials. That groupings of staff are therefore regarded as *working parties* rather than liaison committees.

(iv) That such working parties consist mainly of teachers engaged in class work.

(v) That such working parties should report to a higher order group, such as a steering committee, representing the schools' managements.

(vi) That a procedure for "maintenance" and further development has to be set up, e.g. the continuance of a "steering committee" which receives reports from the schools involved and the continuance of the working party (meeting less frequently) as a monitoring and reviewing agency.

(vii) That organised provision has to be made for teachers to visit each other's schools and classrooms.

12.14 These conditions deserve some elaboration.

(i) *"Commitment" by the education authority*

Our visits gave us the opportunity to see in action many commendable initiatives in liaison between primary and secondary schools, and in our contacts with regions and divisions we were supplied with accounts of many more. At the time of our review (1981 — 83), there was much effort and thought being given to projects of this kind throughout Scotland. One crucial design principle emerged: only where the local authority had made liaison an item of curricular policy was it likely to be effective and lasting. The enthusiasm of individual teachers, the goodwill of a group of schools are not enough of themselves; guidelines have to be made available and the authority's officers have to be concerned to see them consistently applied.

That was our most important observation. More particularly we observed that commitment did not always take the same form. There were cases when an initiative in liaison was begun at a meeting of staff called by the authority rather than any school group. This always had a positive effect of bringing a sense of direction and seriousness to the enterprise. The presence and active interest of senior officers of the directorate on such occasions does appear to concentrate the minds of participants.

In one case a member of the directorate remained involved in the development work. That his presence was of clear and positive benefit was testified to by all the teachers involved. We stress the significance of this while reluctantly recognising that this degree of commitment can hardly be the norm!

We also observed the positive effect of the readiness of an authority to recognise that there are resource implications in joint initiatives. When teachers travel, there are travel costs; when teachers are working out of school their classes need to be covered; the work done generates needs for secretarial and reprographic support; frequently needs for new resources for classrooms — books, stationery, equipment — can be generated. Development and the morale of teachers involved maintained a high level when financial and staffing support was made available.

In ways such as these it became clear to us that successful curriculum liaison was not a matter alone for individual secondary schools and their associated primaries.

(ii) Support from outside the school

We observed that the developments in curricular liaison that appeared to have most impact and staying power had been undertaken by the staffs of the schools involved. This was in contrast to development work very heavily dependent upon persons or agencies outwith the school (as for example, local authority advisers or college of education staff). This is not, we insist, to undervalue projects set up and introduced from outside the schools involved.It is to recognise that the value of such projects lies in training and professional development: characteristically at their best such enterprises cause teachers to reconsider their own practices and in the light of that reflection modify them in their own way. This, however, is rather different from setting up joint programmes of work across schools or departments, creating agreed syllabuses, achieving consensus on matters of principle, all of which are typical features that arise in curricular liaison exercises. It became our conviction that such structures of work or principle have to be the product of the teachers involved. Otherwise they may be seen as externally imposed, and therefore do not stick.

That relationship having been established there is no doubt about the value of the presence of support from outside the school. Advisers and college staff, both as members of working parties and as consultants, commentators or moderators, have shown themselves to be almost indispensable in their ability to provide information about relevant research and development, about similar developments elsewhere, and to offer illuminative and formative evaluation.

(iii) *The working parties*

"Liaison committees", or occasional ad hoc meetings of groups of staff have enormous value; and many teachers have testified to the usefulness of getting to know colleagues in the context of meetings where information is exchanged or general issues of common interest are discussed. It is also true, of course, that such meetings are sometimes perceived as time-wasting, as talk-shops, as pleasant but not very productive social events.

Such groups are transformed when they take upon themselves a remit to produce an outcome. The sort of undertakings we have observed have been agreed syllabuses in given subjects covering the 10 — 14 years; learning materials and packages making use of available resources; assessment materials; general guidelines or policy statements. Working parties with such a product-orientation are not easy to run. Forthcoming case studies will attempt to show the kinds of processes involved, and at Appendix E we try to illustrate some of the features of a 10 — 14 working party at work. An extremely valuable publication *Language Across the Transition*[1] contains detailed advice including an interesting section on 'liaison and continuity as functions of human relationships', a consideration, we have observed, of some significance.

It is true that the products of working parties can be of variable quality. But the depth of shared understanding, the commitment to achieve high quality educational standards, the increased professionalism that this kind of work appears to produce has been most impressive. The process of development is perhaps more important, but the product is a necessary focus.

(iv) *Class teacher involvement*

There is a tendency, almost a tradition, in primary schools that curricular policy matters including liaison with other institutions, are the sole preserve of the head teacher, such matters being seen as part of his/her special responsibility. This is too narrow a view. The involvement of class teachers, who of course remain responsible to the head teacher, is an important feature in their own professional development and ongoing training. It enables them to see their own role in the wider context of the whole school, and even more important, to see their role as contributing to the learning experience of children in a context of time, a perspective sometimes hard to achieve amidst pressures of class teaching. It enables teachers to achieve a deeper understanding of the policies that are formulated, and encourages them to adopt these policies as their own.

We certainly observed it as a positive benefit when class teachers, as well as promoted staff, were involved in the work of curricular liaison and development.

(v) *Accountability*

Working parties of the kind we observed working successfully were invariably engaged upon an aspect of the curriculum, and sometimes indeed upon an aspect of an aspect, as for example assessment and recording of attainment in mathematics, or the use of the novel in a language arts/English programme.

Not the least pleasing feature of much of this activity was the enthusiasm that was generated within the working parties, an enthusiasm that sometimes had the effect of making members forget that other parts of the curriculum were equally important and made quite proper demands upon time, resources and teacher-energies.This tendency to disbalance was corrected in a number of instances by a superordinate committee, most commonly referred to as a steering committee. The steering committee had other observable values. It provided a resource of additional advice and support when a working party was running into difficulties, and unquestionably it energised flagging working parties by setting overall plans and creating deadlines.

(vi) *Continuous evaluation*

In the relatively small number of cases where a group of schools had attempted to establish curriculum liaison over a broad spectrum and for a sustained period of years, the importance of continuous evaluation had strongly emerged. Not only is it necessary to see that valuable innovations are maintained, but equally, allowance has to be made for further development. This role of evaluation fell on steering committees where these existed.

These two sets of observations, (v) and (vi) above, proved to be of great value to us in developing our thinking. From them we came to perceive the need for an overall management/co-ordinating committee representing the secondary and its associated primary schools, and with a comprehensive curricular policy which would enable it to provide guidance for the working parties that it would set up to deal with particular curricular issues, and to evaluate the effects on practice of its own work and that of its working parties.

(vii) *Staff intervisitation*

It was a pleasant feature of our field work to find as we did so much goodwill for the general idea of liaison among teachers in primary and secondary school. Within that context, it came as a shock to find so much ignorance and misunderstanding about practice across the sectors. What made the latter observation less dismaying was the readiness of teachers to admit to ignorance and their willingness to have their misunderstanding corrected. Virtually everybody agreed that to that end intervisitation should be encouraged.

It has to be recognised, however, that brief visits, inadequately prepared, are not always as valuable as hoped for. It can be a bewildering experience for a secondary teacher to be pitched into a P7 class, especially if that class is engaged in a variety of activities covering a range of "subjects". Primary teachers equally can find themselves embarrassed and intrusive if they join an S1 class and follow it around a typical secondary timetable. Their vision of what happens to their erstwhile pupils can be a curiously partial and fragmented one which may produce more misunderstandings than it clears up.

These dangers can be overcome, and if overcome nothing is more valuable among the practicalities of liaison than intervisitation. The way to overcome the problems is for the teachers to prepare their minds for what they are about to see in their visits and to give themselves a specific focus to make their observations meaningful. Having worked together with colleagues on a curriculum working party, having focussed on particular issues of learning, teaching or assessment, is an excellent preparation for making visits a fruitful experience.

12.15 Such were our reflections and conclusions on widespread observations in the field. It was these that influenced our thinking as we turned our minds to the kinds of recommendations we might formulate for the management of curriculum 10 — 14 at school level.

Essentials for Collaborative Management of the Curriculum

12.16 The essential feature of the kind of mangement model we envisage is that it brings together, in a co-ordinating team, key personnel from both sectors, and that these persons should themselves have responsibility for curriculum in their own institutions at P6 and P7, and at S1 and S2. We seek to bring together in a collaborative relationship the curriculum management structures for S1 and S2 in the secondary school and for P6 and P7 in the associated primaries. Where no such structures exist, or where they exist only in embryo, we seek to bring them into existence.

(a) *The S1 — S2 co-ordinating team*

12.17 The S1 and S2 curriculum calls for a co-ordinator whose central role is to oversee the contributions of each area of the curriculum to the overall learning experience of the pupils. In schools which already have an assistant head teacher who acts as "head of lower school" this teacher might readily take on the co-ordinating role. Where a school is large enough to have "year" heads, the AHT from S1 or S2 would seem best placed for the post. Where a "vertical" system of management is adopted and an AHT is not available for the role, a senior and experienced teacher should be designated. It may be that the most appropriate person would be a principal teacher of guidance. His/her timetable will need to be adjusted to ensure that adequate time is made available for the work of co-ordination.

12.18 The co-ordinator should be supported by a team of teachers who in turn have responsibilities for areas of the curriculum. We recommend that at least four teachers be designated. They are likely to be at principal teacher or assistant principal teacher level. Two of these should be active as class tutors/or base teachers, and, if that is not possible, one, or two such teachers should be added to the team. Again it is recommended that a timetabling adjustment be made to enable them to undertake the duties of assisting the co-ordination. It is essential that the team should include a senior guidance teacher and an experienced member of the remedial or learning support service, who has direct contact with colleagues in the primary schools. This team should have the right and responsibility to consult and/or co-opt as necessary other teachers to enable a coverage of the full curricular experience of pupils to be made. The secondary school's librarian can be of great value as consultant on resources.

12.19 This team will comprise at least six persons, plus co-ordinator and consultants. It will afford its members immensely useful experience in overseeing the whole curriculum and in shaping and implementing school policies. It will, therefore, provide professional development opportunities, and should be consciously used by school management to this end. Its purpose in this regard should be recognised by staff members. In order to spread the benefit of this experience, there should be a rotation of membership every two or three years, though care should be taken to maintain a continuity of membership as well.

(b) *Curriculum management at P6 and P7*

12.20 In the primary schools the curriculum management team would consist of the headteacher, the assistant head teacher (upper stages), if there is one, and the class teachers of P6 and P7. Primary schools, of course, vary in size even more dramatically than do secondary schools. The "curriculum management team" at P6/7 can consist of one teacher who is also the head teacher. For a teacher in such a situation there are specific advantages to be gained from the opportunity to associate professionally with colleagues in other primary schools and in the associated secondary.

(c) *The 10 — 14 co-ordinating team*

12.21 The team should consist of the nucleus of the secondary team (co-ordinator and four teachers) with one representative from each associated primary school. The

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primary school is best represented by the head teacher or assistant head teacher. Experience suggests that the chairperson is most conveniently the secondary school co-ordinator, but, given the collaborative nature of the enterprise, there is no essential reason why this should invariably be so. What we perceive as of overriding importance is that the "right" person should be appointed to this position and that great care should be exercised. We recommend that the decision should be reached after consultation and discussion of the nature of the task. Education authorities should be closely involved in the decision.

12.22 The 10 — 14 co-ordinating team should have the right and responsibility to consult and/or co-opt teachers or other specialists who can make appropriate contributions to the fulfilment of its function.

(d) *Variations on the basic model*

12.23 Where the number of associated primary schools is small (up to perhaps four), it is likely that one or more of these will be large schools. In such cases it would seem appropriate to enlarge representation from these schools on the 10 — 14 management team.

12.24 Where the number of associated primary schools is large, we recommend a "nesting" arrangement. By this we mean that the primary schools should be arranged in two or three groups for convenience of meeting and transport. Each group is a "nest". When the nest meets, it will comprise a representative (or more than one if this is convenient) from each primary school together with at least one member of the secondary team.

12.25 Representatives of each nest of primary schools will, along with the members of the secondary management team, make up the 10 — 14 management team for this type of large "family" of schools.

12.26 The structuring of a nest system will again be a matter for decision which involves officers of the education authority.

Function of the 10 — 14 Co-ordinating Team

12.27 1. The prime function of the team will be to ensure that the partnership of schools offers a coherent and continuous educational experience. It will seek to do this by giving heed to relevant national documents of guidance,and to the policy documents and guidelines promoted by regional and divisional agencies. In the light of its own circumstances it will seek to interpret such guidance so as to harmonise the philosophies, value systems, teaching and learning processes, and range of content covered so that children do not suffer from harmful discontinuities either as between one primary school and another, or as between each primary and the associated secondary. In this it will bear in mind its responsibility and accountability, through the head teachers involved, to the education authority.

2. The team will be the principal forum for the exchange of information about existing practice, and will make decisions in principle about the nature of desired change and innovation.

3. It will, where necessary, set up working parties to achieve particular objectives within its own general curriculum philosophy.

4. It will act as a reviewing and evaluating body for all practice in the 10 — 14 stage in the partnership of schools.

5. It will keep reminding teachers that their job, whatever their training or specialism or experience, is to contribute to the fulfilment of all the desirable outcomes of the curriculum. The team should advise on appropriate aims and objectives within the curriculum 10 — 14, and on the balance or emphasis of objectives across that curriculum.

6. It will attend particularly to those cross curricular responsibilities which are shared by all teachers: e.g. matters relating to the appropriate language for the various interactions that the schools require, both cognitive and social; matters relating to learning difficulties; matters relating to the necessary assessment procedures and the transfer from school to school and teacher to teacher of such information and records as are desirable and useful. In relation to the learning experience of pupils, it will be particularly concerned with permeating and other disseminated activities (cf. Paras 5.11 and 8.104–8.120)

7. It will identify needs in staff development and training for the age range.

8. It will, within the general administrative structures of the school, arrange for staff intervisitation to take place.

9. It will be responsible for all induction and transfer arrangements of P7 pupils to S1.

10. It will actively encourage, and arrange for there to be, joint curricular and social activities among the schools in the partnership including the sharing of resources where appropriate.

12.28 Two comments are immediately required.

(a) **The autonomy of schools**

First, we have expressed these functions relating to the whole group of schools. We wish it to be clear that each school in the partnership will seek to implement the decisions of the co-ordinating team in its own school, it its own way, through its own management structure. *The principle of autonomy within guidelines should be applied at all levels*. Nor do we wish to establish uniformity for its own sake: it would be futile and foolish to proscribe or limit valuable work in one school, deriving perhaps from special expertise or particular enthusiasms, simply because it could not be done elsewhere. What we would insist upon is accountability for the idiosyncratic.

(b) **The pace of change**

Secondly, although we have described the co-ordinating team's functions in terms that cover virtually all the concerns in the age range, *we do not expect the team to undertake a development of all aspects simultaneously*. We do recommend that the team be assembled as quickly as possible giving due consideration to the selection of appropriate personnel. Thereafter the team should proceed to select priorities for development devoting time to a thoughtful preparation of a long-term programme for submission to its regional authority.

12.29 Nor do we suggest that the team proposes and implements changes entirely by itself.

12.30 Hence item 3 in the list of functions of the team — the setting up of working parties to achieve particular objectives. What we have in mind here are, for example, the production of agreed syllabuses in given areas of the curriculum, or teaching materials making the best use of the resources available to schools or any of the other possibilities we have referred to in earlier parts of this chapter.

Frequency of Meetings

12.31 This is not a matter that can be determined other than by the needs identified and generated by the curriculum team itself. It is raised here, however, in recognition of the fact that the frequent absence of teachers from classrooms creates unacceptable difficulties — unless arrangements are made to cover their classes.

12.32 We anticipate that the full team would need, in the early stages of its existence, to meet fairly frequently, perhaps twice a term to determine its operational policy. Thereafter its meetings would be necessary once, or perhaps twice, per academic year.

12.33 Working parties, on the other hand, need frequent and regular meetings.

Professional Development

12.34 The resource implications of this degree of frequency are considerable. But such costs should not be looked at in isolation. Work of the kind undertaken by teachers addressing themselves to the identification and solution of problems in curricular provision for their pupils constitutes a most powerful and effective form of staff development as well as of curriculum development. Regarded in this light, the outcomes of our proposals may prove to be very cheap at the price.

The Schools Co-ordinating Team and the Education Authority

12.35 We hope we have already made it plain that the curriculum management structure of each "family" or partnerships of schools cannot operate in isolation, that for success it needs the backing and commitment of the local authority.

12.36 That commitment should include an authority policy to encourage curriculum liaison on the lines we have set out. It should include the setting up of co-ordinating teams and their associated working parties, each group of schools being resourced to implement the structures and procedures we recommend.

12.37 In addition,curricular policies for the age range, interpreting and adapting national policies, should be made available for the guidance of groups of schools. The schools should interpret and apply authority guidelines in the light of their own circumstances and with the support of authority officers.

12.38 In doing so, teams should regard themselves as being accountable to the local authority in terms of these guidelines, and, in negotiation with the local authority, should establish targets of achievement for themselves in the light of guidance.

12.39 It will be for authorities themselves to determine how best to ensure that accountability is established. We assume, however, that in this matter the advisory service would play a key role. We note that an advisory service whose members are appointed strictly for secondary or primary duties is not best designed to promote the growth of an effective 10 — 14 curriculum, and elsewhere we recommend that specific responsibility for curriculum 10 — 14 be allocated to two members of the advisory service with appropriate experience in each sector.

12.40 There is a delicate balance here between the proper autonomy of school groups and the necessary accountability to the authority responsible for educational provision. It is, however, no more difficult of achievement than the balance to be achieved between freedom and authority in many other circumstances. Given goodwill, good communication of policies, understanding, the recognition of what is special in each situation and adequate resources, it is a balance which can be achieved.

12.41 We have already suggested (at 8.153) that each group of schools should negotiate its selection of priorities for development with the education authority. The authority, should,of course, encourage the particular enthusiasms of any given school group, and it is essential that all schools should engage in development of some parts of the learning programme. But the authority should at the same time seek to achieve as many different developments as possible over the range of schools for which it is responsible in the interests of cost-effectiveness.

12.42 The extent to which teaching materials, programmes of work, assessment procedures, agreed syllabuses can transfer from those involved in their making to those not so involved is a matter in need of study. We believe that the responsible officers of the authorities should monitor and report upon the effectiveness of transfer of such materials. It is a matter of importance to establish understanding of the degree to which the professional development of teachers (a necessary concomitant of curriculum development) can be achieved by their using the work of their colleagues elsewhere. It is also necessary to know the *means and processes* by which such success can be achieved. This applies equally to materials adapted from work produced at national or regional level.

A Partnership of Schools

12.43 We have used in this section of our report the phrase "a partnership of schools". We have proposed our co-ordinating model for curriculum as a major way of making this ideal a reality. We should wish to promote the idea that a secondary school and its associated primaries is an operational entity working harmoniously with a shared philosophy for the benefit of the children who will pass through it.

12.44 The "Parents' Charter" offers parents a free choice of schools and a number at present choose to send their children to secondary schools which have no relationship with the primary schools attended by the children. Such children could be disadvantaged in not coming from schools within the kind of partnership which collaborative management will foster. It will be necessary for schools, both primary and secondary, to bring to the notice of parents, through brochures and other communications, the value for their children of being part of a "family of schools" sharing common aims, ideals and curricular philosophies. Parents, we venture to hope, will come to see the advantages that their children would derive from being part of a "whole" system of education.

SUMMARY

The years 10 — 14 raise complex educational issues, including a range of relationships among schools and teachers. The development of the 10 — 14 curriculum in this setting must be the responsibility of those who teach 10 — 14 year olds in a partnership of associated schools to review and improve their curriculum step by step. The management of the curriculum should be collaborative. We recommend the establishment of a co-ordinating team made up of key staff from P6-P7 and S1-S2. We describe the membership of the primary teams, the S1-S2 team, and the 10 — 14 curriculum co-ordinating team, with the conditions which help teams to work most effectively (including the committed support of regional and divisional staff, and the team's accountability to their education authority). The 10 — 14 co-ordinating team's main purpose is to ensure that their partnership of schools offers learners a coherent, continuous, progressive education. Each school will have the freedom to carry out the 10 — 14 team's decisions in the most appropriate way within that team's, and the authority's guidelines. These teams should be formed and meet as soon as possible, to prepare a programme for review and development of their curriculum. Every aspect cannot be dealt with at once, but each should be considered at some point within that programme. The authority, through designated officers, should negotiate priorities for development within each group of schools, and should monitor and report upon effective ways and means of sharing developmental outcomes.

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CHAPTER XIII

SOME MAJOR IMPLICATIONS FOR THE EDUCATIONAL SYSTEM

TEACHER EDUCATION AND TEACHING QUALIFICATIONS

13.1 Our Report is built on the belief that there are concerns of teachers and needs of children which are common to P6 – P7 and to S1 – S2, and therefore the attempt to achieve continuity and progression in Education 10 – 14 is central. As a result, the Report cannot fail to have implications for teacher education. It is safe to assert, in view of the present restricted intake numbers, that continuing staff development will be among the most crucial issues to be faced for the next decade or so. The arguments put forward so far in this Report have very important consequences for both initial and in-service teacher training and therefore significant implications for the Colleges of Education and the education authorities as the principal agents involved. These implications apply also to the Secretary of State, who has in the long run to provide or will the allocation of the necessary resources. Insofar as teaching qualifications are concerned, the General Teaching Council will also have a clear interest.

Implications for Teacher Education

13.2 Our suggestions and recommendations for the future of education over the 10 – 14 age range are founded on two fundamental premises:

(a) that there should not be a general system of middle schools in Scotland. The present primary and secondary stages will, in institutional terms, continue as before. As we have said, this should not be construed as a criticism of the small number of middle schools which have existed for some years, but only as a recognition of realities as we perceive them.

(b) that nevertheless, in terms of curricular coherence and continuity over the 10 — 14 age range, there is a need for teachers with middle school skills, attitudes and insights.

The first of these premises relates to structural factors deriving from a whole cluster of administrative and legal frameworks. The second relates to the experiential nature of teacher training itself, its content and methodologies, and what it holds valuable in its beliefs about the human activities and relationships involved in the learning and teaching processess. These two sets of factors are closely intertwined and it is impossible to deal fully with the one without paying attention to the other. At any point in time both must be taken into account, however much we would wish to stress the importance of "content" as opposed to "structure"; and we have always recognised that what we would wish to say might lead to some confrontation with existing regulations for teacher qualifications. In addition to such specific recommendations as we shall make in respect of the latter, we urge upon Colleges of Education the need to be imaginative and so far as possible flexible in their pursuit of solutions to the "content" questions we have posed.

13.3 These questions and their implications are explored at length in preceding chapters. We do not suggest that all of these matters can be dealt with in pre-service training. What can be done for both intending primary and secondary teachers is to lay a foundation of awareness of the range of problems and possibilities we have set out, give an introduction to the ongoing debate, and especially in secondary training try to establish in young teachers an attitude to their own subject specialisms which sees these as only part of a broad learning fabric to which all other teachers must contribute in a co-operative way.

13.4 We have stressed that the nine aspects of experience set out in Chapter VI are not to be confused with a nine subject structure for the curriculum. This is an elusive and difficult concept to grasp, and one still more difficult to put into school time-tabled practice, unless all teachers share the belief that they are not merely teachers of a subject, but contributors to a broader purpose in which they are collaborators with the pupils themselves, other teachers, the wider community of the school and the even wider community it serves — a purpose which stresses the importance of all the aspects of experience and the need to provide a balanced education.

13.5 In the nature of things, young teachers will come very early in their careers into some contact with the systems we have set out for local management of curricular coherence and the smooth transition of pupils. In secondary they will be involved in the duties and responsibilities of the base teacher. The formal intention to be a teacher of, for example, English or mathematics must become established in this wider context.

13.6 Similarly, so far as pupils themselves are concerned, young teachers must become familiar with the desirable outcomes we have set out, and learn to plan not only their subject content but classroom methodologies so that they contribute to the emergence of these outcomes in increasingly independent learners, steadily more aware of their own learning capacities. Pupils attain these capacities through learning processes which feature collaborative teamwork and mutually supportive attitudes on the part of staff from different disciplines.

13.7 If in training the young teacher merely hears about such concepts, and is never brought to experience them in the training process itself, there is little prospect of their informing later classroom practice. College methodologies must themselves show, in practice, the encouragement to the co-operative activity, flexibility, independence, enquiry, and broad view of teaching responsiblities they seek to inculcate. We recognise that there are profound implications for the organisation and allocation of College resources, both human and material, which are needed to support such aims. We believe that the potential benefits for new teachers and their pupils are so great that Colleges themselves must be supported by the provision of adequate time to plan and implement. We are encouraged by the belief that all Colleges have in some ways made moves in this over-all direction, although hampered by departmental structures similar to those in secondary schools and restricted by the stated lengths and purposes of courses leading to the various Teaching Qualifications. It would be unfortunate if we were seen merely to be urging the cramming of yet more material into already crowded courses when often what we have sought can be achieved by some slanting of existing elements, some greater use at times of common elements across different course groups, and above all the establishment of a type of relationship through which the young teacher has a genuine sense of entering a profession where all have a common task in developing and improving the existing curriculum.

13.8 We would be dishonest, however, to ignore the practical difficulties for the Colleges, especially those which stem from the existing patterns and structures for teacher qualifications.

The Background to the Problem

13.9 The history of teaching qualifications in Scotland has developed sometimes in grand stages, sometimes piecemeal to meet particular situations. We do not wish to rehearse this whole history, but take as our starting point the early 1960's. Since then we can identify a continuing process of over 20 years of formal attempts to improve initial teacher training, all of which have worked on the basic premise that improvement lay along the line of bringing training closer to the practical problems of the actual classroom job to be done. Extensions to the length of training courses, increased co-operation with schools, and proper orientation of all training to the appropriate educational sector have therefore all pointed towards separation of primary and secondary rather than closer links.

13.10 Post-graduate courses since 1965 must be in either primary or secondary. Old Article 39 secondary qualifications taken with primary training have disappeared. The new BEd is specifically a primary degree, with no reference in it to secondary situations.

13.11 These attempts to improve training must be applauded. They came from a climate in which the *Primary Memorandum*[1] was insisting on primary education as a stage in its own right, with children to be taught according to the present age and abilities, not as a preparation for secondary. The "new start" philosophy of secondary as expressed in the early Comprehensive Education Circulars[2] published by SED at the time compounded this belief in two systems validly seen as separate. "Primary-secondary liaison" as a concept simply underlined separation, and primary-secondary continuity now comes into the situation almost as an afterthought.

13.12 Separation is embedded deeply in teachers' attitudes. There is a long history, in society as well as in the profession, of primary and secondary schools being quite differently regarded. It is only recently, and perhaps not universally, that the intellectual demands of teaching young children have been recognised. It is only recently that the full implications of comprehensive secondary schooling — including the need to educate all pupils and not a selected 'best' group — have been recognised. The perception that primary and secondary schools are contributing to the same continuing process can be seen as a threat — to primary teachers who fear an imposition of secondary patterns and procedures, to secondary teachers who fear that their subject expertise may be undervalued and subordinated to an ill-defined 'child-centred' philosophy. These fears are made worse in a time of falling school rolls when fears become widespread that structural changes may be made for economic or political, rather than educational, ends.

13.13 It is essential that any proposals for change should not be seen to be exacerbating the present situation by seeming to encourage large transfers of teaching staff from one sector to the other. Nor should any such proposals threaten in other ways by arbitrarily transferring pupils from one sector to the other by an alteration in the transfer age.

13.14 There are clear signs now of a groundswell of sympathy for continuity between the sectors, and much evidence of efforts at local levels to achieve this. We are convinced that any proposed solutions should attempt to capitalise on this sympathy, in a non-threatening way, by working within existing Regulations and training patterns. When the General Teaching Council has discussed training in recent years, it has confirmed separation by making it impossible for holders of a Secondary Teaching Qualification to teach general subjects in primary schools (December 1982)[3]. It has also asserted in many responses to course proposals its unhappiness about any "two for one" proposal, i.e. a course which leads to dual qualifications. There would be no sympathy in GTC, we believe, for any move to restore the "developmental" BEds leading to dual qualifications in primary and secondary so recently abolished in any case by the Secretary of State. This is the case, although the common elements of such degrees provided the opportunity for intending primary and secondary teachers to develop the 10 — 14 insights which we now clearly require.

A Range of Possible Solutions

13.15 Colleges of Education — Implications for Initial Training

(a) **4-year primary BEd courses**

The new courses have only just been inaugurated in session 1984 — 85. The National Guidelines[4] issued for use by individual Colleges as the basis of their courses make no mention of any primary-secondary links or continuity. The degrees are specifically primary qualifications, and even in a four-year structure there is pressure on time, since the age range to be covered is now 3 – 12, to include an element of experience in the 3 – 5 area, where previously less was done. Also several aspects like health education and multi-cultural and international education have now to compete for their legitimate place with more traditional elements. Consequently it will be difficult to add further units on curricular coherence over 10 – 14. What could be sought would be the inclusion within Professional Studies courses of specific elements leading to an awareness of a 10 – 14 dimension in the training of primary school teachers. Topics like learning theory, child development and the structure of the curriculum could have such units built in. School experience as distinct from formal school practice in secondary schools might be possible at points in the structure, through one-day or half-day visits.

Equally, there is little prospect of grafting a secondary teaching qualification on to the new courses by providing the equivalent of a "double" at university level in the range of single-subject in-service courses. The course structures themselves do not appear to allow it, and the subject content, being geared to primary school interests, is not very likely to be easily acceptable to secondary interests or easily adaptable either.

(b) **Post-graduate one-year primary courses** have been by far the most hurried and splintered courses offered in Colleges of Education, in view of the need to cover so many curricular areas in so short a time. Even in the slightly extended one-year courses now offered there is not going to be any welcome for suggestions to add in further elements, especially as the age-range to be covered is now 3 – 12. In a more restricted way, Professional Studies might make the same kind of contribution as suggested for the BEd courses.

(c) **Post-graduate one-year secondary courses** leading to a single-subject teaching qualification (secondary education) also suffer from lack of time, but perhaps not so sharply as the post-graduate primary courses. In any case there is a duty for subject departments to lay stress on new forms of organisation and approach in S1/S2. Some aesthetic/practical subjects like art, music or physical education have, since 1965 at least, laid heavy emphasis on pupil development and sometimes school experience at primary level although no formal qualification to teach in primary was implied. These elements should certainly not be reduced in any future framework. It is also to be hoped that the same strong awareness of at least the 10 — 12 years will be developed in future by all subject departments seeking to give future secondary teachers experience of the teaching attitudes and classroom methodologies of the primary school, as well as insights into the skills and concepts which most pupils might expect to bring with them into secondary school.

Again the contribution from Professional Studies courses would be of crucial importance to put subject-based awareness into a wider framework of teaching and learning contexts.

(d) Colleges can also without major changes in the Regulations make internal arrangements such as seminars, or joint meetings of different groups, to bring together interests across the primary-secondary divide. Some do. What is required is a strong and positive act of will to secure the advantages of such interchange as a normal and educationally integrative part of all training courses.

Colleges of Education — Implications for In-service Training

13.16 Our suggestions in respect of pre-service training will provide at least a palliative, and in some cases something better, in order to produce that common awareness in teachers across the divide between two school sectors, which will be necessary in the absence of any possibility of free movement to teach across the boundary if they are to understand each other's problems, intentions and solutions. It is not part of our intention to make any suggestion that there should be such movement. History is against it and the climate is wrong. Such better solutions as there are lie in in-service provision, where already existing opportunities may be listed as follows.

13.17 (a) **In-service BEds**

Such courses have already begun to emerge for teachers already qualified in primary. Different part-time structures with differing patterns of study will in future be validated, possibly on a topic or even a modular basis.

It ought to be possible to build into these courses a strong component dealing with 10 — 14 issues, including curricular coherence, continuity of skills and concepts development, and articulation of teaching and learning strategies or methodologies. We urge that this should be done. The target population will be Primary Diploma holders working in primary schools. No extension of teaching qualification is involved.

(b) **Associateships**

The existing Upper Primary Associateship (8 — 12) is to be used like other associateships as some level of credit towards an in-service BEd. This is unfortunate if it is seen to devalue the qualifications, since the in-service BEds themselves will exist only to meet a passing problem. In future it is to be hoped that associateships will revert to being an extension of professional expertise through a special qualification and held in high regard in their own right. In view of pressures on staffing resources some Colleges have limited their offerings of associateship courses, but this trend may reverse. Associateships, particularly in upper primary or in the extended range suggested now for some years, to include at least art, music, physical education and drama, would then be a proper vehicle again for developing primary teachers' expertise, on top of any initial qualification, whether degree or diploma. The possibilities for 10 — 14 are important, notably as some discussion has already taken place to make parallel qualifications open to secondary teachers, and include such areas as home economics and technical education. These discussions are now in limbo, and the proposals would require extensive re-examination, but a way forward for 10 — 14 developments through the extension of associateship-type courses must be a reasonable if long-term prospect. As special qualifications they would confer some strength and credibility on teachers involved across the 10 — 14 range, from P6 to S2, without changing their basic category of teaching qualification.

(c) Supplementary courses leading to teaching qualifications in secondary education

Such courses, the equivalent of one-term courses, but often taken by summer attendance for two weeks at a College of Education followed by supervised work in the secondary school, have long existed as a source of extension of secondary teaching qualifications, and for conversion of primary teachers who hold appropriate degree passes.They will continue in future, but will perhaps have more value in their extension rather than their conversion role. It is not in accord with recent trends or with our own views to look for a new source of secondary teachers qualified in only one subject. The trend is all for double qualifications to teach where appropriate a range of subjects. Single discipline university degree structures may as a result be at some disadvantage in future, as College selection for post-graduate initial training becomes increasingly more rigorous.

In addition it is not expected that the new primary BEd degrees will give the same basis for additional teaching qualifications as more traditional university degree structures. The history of attempts to move away from traditionally named subject areas into new teaching qualifications in such areas as environmental studies, or outdoor studies, does not encourage the belief that new teaching qualifications can be easily developed.

The courses themselves have recently been restricted to "shortage" subject areas in most Colleges and we do not regard them as a satisfactory vehicle for securing the coherence we wish to see, but they do have a small contribution to make, which should not be forgotten.

(d) A different approach

We believe that all of the avenues described so far should be pursued by the Colleges, and certainly that none of them should be allowed to become closed off, either by accident or design. Nevertheless they all suffer from the same basic defect that primary and secondary teachers never really come together in a training situation.

We believe that the way ahead is not through trying to turn primary teachers into secondary teachers and vice versa. Although such a policy would meet the objections of the professional organisations to any teaching roles being exercised over the "divide", it would in present circumstances still not get off the ground, not because of the expense involved, but because it would be seen as threatening to the profession through generating a fresh supply of teachers in a situation of declining school rolls. The only limited way in which primary teachers can at present work in secondary schools is in the area of remedial education. Even the new Diploma in Learning Difficulties usually has a primary and a secondary form. The only ways in which secondary teachers can operate formally in primary schools are in the aesthetic/practical areas of art, music and physical education.

Nevertheless in post-experience College diplomas there is a mechanism through which teachers could train together. One of the Diploma in Learning Difficulties structures for example contains a "bridging course", not part of the formally validated diploma structure, which was devised in order to bring together the primary and secondary courses. Also the National Advisory Committee on Guidance (NACOG) reporting to the Committee of Principals of Colleges of Education in 1981[5] urged the introduction of a new general advanced diploma course, the equivalent of one year's duration, which could be assembled by secondary teachers passing modular units of about one-term equivalence in length.

The clusters of required modules to obtain an Advanced Diploma in Educational Studies were to be the subject of national agreement and nationally validated. Existing modules would come from already established courses like the Diploma in Special Education, Diploma in Learning Difficulties, or the Certificate in Guidance. New elements would in modular form cover the subject interests of individual teachers, or add more general modules in such areas as assessment, personal education, or community education. It would be for the teachers concerned to decide whether they stopped at individual modules or went on to acquire the Advanced Diploma through a personal but nationally validated aggregate of modular passes.

NACOG was thinking of needs in secondary. There seems no compelling reason however why such an Advanced Diploma should not be open to all teachers as a mark of continued professional development. Different modules would appeal to different teachers, but some would be open equally to both primary and secondary teachers, to be used as the teachers and their authorities thought best in their own school situations. One such module could relate to the rationale for a curriculum at 10 – 14. Another might look at personal growth and social education over the same age range. Yet another might examine assessment and recording techniques.

The strength of this proposal would be in the teachers working and training together either for their own purposes, or with the motivation of an additional qualification. Elsewhere in this Report we have recommended various organisational and structural patterns to promote effective co-ordination between primary and secondary schools. Joint training activities of the kind outlined would create the mutual understanding and shared insights which would give heart and motivation to the process.

Some Colleges are already prepared with blueprints for Advanced Diplomas in Educational Studies. Some have obtained SED approval in principle. Additions of the kind described — a modular structure with joint training opportunities — should not be difficult to incorporate. Education authorities might, if they supported the principle of 10 — 14 continuity, be prepared to nominate teachers in a planned way to these modules to secure the emergence of trained cadres of teachers in both secondary and associated primary schools. The AHTs in charge of curriculum at S1/S2 and the AHTs in upper primary schools (where these existed) would be prime initial candidates. The outlay would be small for such a potentially valuable return to so many pupils.

IMPLICATIONS FOR EDUCATION AUTHORITIES

13.18 Education authorities carry the responsibility for education in their geographical areas, and for appropriate staff development. For nearly two decades they have borne the major burden of in-service training other than in formal qualification courses, although education authority advisory and directorate staffs have often sought and obtained the active co-operation of Colleges of Education and other bodies in this work. The strength of provision and patterns of provision in advisory staff support vary sharply over the country, partly for geographical and demographic reasons, but also for reasons derived from economic choices and political will.

13.19 We recognise and accept that choices have to be made. We would argue however that the importance of the age range 10 — 14 for all future attitudes to learning and schooling is such that it will merit special attention over the next few years. General economic, social and industrial conditions are such that we cannot afford to risk losing the battle for pupils' hearts and minds by artificially created and deliberately maintained, unnecessary discontinuities in the educational process.

13.20 We therefore suggest that our proposals have implications for education authorities in

(i) in-service provision and supply staff

(ii) advisory and support staff provision

(iii) resource allocation.

In-service Provision

13.21 One clear area where positive action should be taken would be at the probation stage for newly trained teachers. We are aware that Authorities have taken steps to implement the "extended training" concept of probation put forward in the Sneddon Report[6] in 1978. While the integrated pattern of training and probation put forward therein has not been implemented, greater co-operation between Colleges and education authority staffs has taken different forms in different parts of the country. We see here a great opportunity to provide or strengthen insights and awareness of educational purposes and methodologies across the primary-secondary divide, by planned, joint activities for new teachers, sometimes involving College staffs as well as school and education authority personnel.

13.22 Chapter XII of our own Report recommends that the detailed planning of curriculum liaison for groups of associated schools should be the responsibility of working groups of teachers reporting directly to a co-ordinating team. The momentum of 10 — 14 developments is likely to be a direct result of the degree of success of these local planning groups and a major responsibility will fall on education authorities to provide the conditions under which these groups can function, as well as orchestrating their activities. There are resource implications here.

13.23 We believe that the work of the local planning groups is likely to be enhanced if it is supported by a programme of school-based in-service linked to the negotiated priorities of the local co-ordinating teams. A national pattern has already been established of full-day closures for schools in order to implement the developments associated with 14 — 16 and 16+ initiatives. We believe that there is a strong case for such a pattern of school-based in-service being directed to the implications of implementing the proposals for the 10 — 14 age group. When education authorities take the initiative in helping schools to determine priorities among the various demands for in-service time, they should encourage the development of programmes of school-based in-service which relate to these priorities.

13.24 School closures for school-based in-service can take a number of forms and we believe that there is a strong case for co-ordinating closures so that associated schools can work together. There may be times when it will be desirable for all of the associated primary schools to have a co-ordinated day closure and a programme of in-service work which allows teachers at the primary stage to examine common issues and concerns. At other times, particularly at the beginning of a programme of liaison or before a new phase of development work, it may be desirable to have a co-ordinated primary-secondary closure so that there is time for extensive collaborative possibilities to be explored.

13.25 It is clear that full school closures for a day can have a variety of purposes and potential for development work. Within the one group of associated schools a range of activities might be taking place with different teachers involved in different programmes. 10 — 14 activities might be one part of a range which could go from liaison among infant staff to work on 16+ concerns.

13.26 We would also encourage education authorities to give consideration to the nature of in-service opportunities offered to local planning groups. There may be occasions when a number of local groups engaged on similar development would benefit from in-service support outwith the schools in order to share ideas and benefit from inputs by advisers or others. This could also include the opportunity from time to time for residential experience where that is possible. Much can be achieved under such conditions and we would urge education authorities to consider the needs of planning groups when drawing up priorities for residential and other out-of-school in-service.

13.27 In considering in-service needs education authorities will have to give consideration to the question of full or partial closure of schools for this purpose. As we have argued earlier full school closures can allow a range of in-service activities to take place but this has to be weighed against the interruption to the teaching programmes that will inevitably take place. Partial closures, focussed on certain members of staff in both primary and secondary, can allow specific developments to take place without interruption to the programmes of work for the majority of pupils. This pattern will be essential for the purposes of local planning groups at 10 — 14. In order to make this possible schools will have to be able to draw on supply staff.

Advisory and Support Staff

13.28 The role of the education authority adviser in 10 — 14 developments, as in all educational developments, is a crucial one. We have already referred to the important role that we believe advisers can play in working with co-ordinating teams and their role in creating a sense of priority for 10 — 14 developments is bound to be a significant one. They will be involved in helping schools to set themselves targets, priorities and agendas for action. They will advise on the use of local and national curricular guidelines and, above all, will support schools in their endeavours.

13.29 However, we feel that the current structure of separate primary and subject advisers does not help to create an atmosphere of understanding and shared concerns between the primary and secondary sectors of education. Too often there is little or no contact between primary and subject advisers and there is no focus of common concern between the two groups. This, of course, varies from region to region or even division to division within regions and there may be notable exceptions to the generalisation made, as in the case of the contact between specialist advisers, in, for example, art, music and physical education, and primary schools.

13.30 We believe that the issue of Education 10 — 14 provides an obvious common concern that should bring primary and subject advisers together in meeting the various needs of groups of associated schools in a collaborative way. We, therefore, recommend that in each education authority there should be at least one primary and one secondary adviser who, together, have a special responsibility for the promotion of 10 — 14 curricular liaison. This allocation of special responsibility for 10 — 14 matters should not diminish the general concern of all advisers for

10 — 14 liaison. It would, however, ensure that there are some advisers in both sectors who have a particular responsibility to develop their own understanding of the whole curriculum across the 10 — 14 stage and who might be expected to have an up-to-date knowledge of national developments and possibilities in this area. There is, of course,a continuing need for primary advisers with continuing pastoral and curricular responsibilities for the whole pre-school/primary stage and for specialist subject advisers who will continue to provide advice and guidance up to the end of the secondary stage.

13.31 There is, moreover, a need to strengthen the support system for developing the 10 — 14 curriculum. Groups of associated schools are at many different stages of experience in developing 10 — 14 continuity even within the same education authority.Some have gained considerable experience in 10 — 14 developments and have contributed to the thinking in this Report: others are at the beginning stages of developing continuity and require considerable assistance. A significant role can be played by an experienced teacher in helping groups of schools to develop their programme of liaison with other teachers in the process of curriculum development. This leads us to conclude that there is a need within education authorities for a cadre of experienced teachers, from both primary and secondary, to be seconded from existing posts to act as 10 — 14 Development Officers in the way indicated above and to be accountable to the education authorities. These Officers would work at helping local development groups to identify their own needs, priorities, structures and programmes of action. Their role would not supersede that of advisers and it is anticipated that the Development Officers would eventually work themselves out of a job as more and more groups of schools developed their own procedures and expertise for developing continuity. We therefore recommend that education authorities should give careful consideration to the deployment of experienced primary and secondary staff, on a seconded basis, to give impetus to the development of Education 10 — 14 strategies. While we firmly believe that such Development Officers should remain in the employ of and be accountable to the education authority we further recommend that consideration be given by the Scottish Education Department to the financial support of such appointments.

Resource Allocation

13.32 Experiences in the Standard Grade Development Programme for the 14 to 16 age group and in the 16 to 18 Action Plan have proved beyond any doubt that major curriculum changes cannot be implemented within existing resources. Resources take many forms — materials, equipment, staff, money — etc, but the most valuable resource of all in a teacher led development is teachers' time. If the proposals outlined in previous chapters of this Report are to be implemented in full then the resource implications must be faced.

13.33 This Report recommends a programme in which curriculum development and staff development are aspects of a single enterprise. While a small measure of progress may be achieved through little more than thoughtful attention to what we have said about the curriculum and learning, we are absolutely convinced that quite generous allocations of time for development work by curriculum managers and classroom teachers are essential if 10 – 14 are to become the years of achievement which they should be. We would emphasise that this is not just a matter of providing time for the writing of programmes and policies. Time is required for teachers to develop their understanding, attitudes, and skills in the management of the aspects of pupils' experience and engagement in all the activities which we have argued should permeate the curriculum. We firmly believe that the 10 – 14 years are, too often, years of wasted opportunity for which no amount of later effort can ever fully compensate and we, therefore, believe that commitment of resources to the 10 – 14 stage is essential.

13.34 Chapters VIII and XII, contain perhaps the most obvious indicators of additional expenditure which may be identified and forecast. The management structure proposed *necessitates* regular joint meetings of staff from both sectors. Afternoon or full day meetings are essential, especially at the early stages of development, but these are only possible if supply teacher cover is available. It is difficult to be precise in terms of the resource implications of such meetings for education authorities since different contexts, priorities and programmes of work will produce different implications. Detailed costings must be the subject of separate studies.

13.35 It may, of course, be argued that there are other ways of providing the time needed for planning meetings, for example by making use of visiting teachers in primary schools. We believe that this would be inappropriate and would be a distortion of the curricular role of such visiting teachers which is important in its own right.

13.36 Similarly the provision in rural education authorities of a part-time teacher for half a day per week in small schools, in order to release a teaching head teacher from class commitment, is something that should not be used for another purpose. The mechanism of supplying additional staff in primary schools for a number of curricular and other purposes is something which we welcome but we would emphasise that such provision should not be used for two purposes. Provision to assist the process of curriculum liaison at 10 – 14 is important in its own right and should, we believe, be additional to other forms of teacher support.

13.37 We have also emphasised the importance of intervisitation. Many secondary schools change timetables on 1 June, with each year group moving up one stage thus making a whole first year timetable vacant. Theoretically one teacher per first year class is set free during the whole month of June. At this time it should be possible for secondary teachers to visit the primary classroom and participate in or at least "get the feel" of primary activities.

13.38 We have already recommended joint in-service training programmes and these, if well directed, should lead to joint preparation of teaching materials. Costs are not easily estimated but in art, craft and environmental studies projects some resources are likely to be required. Much of these costs can be found from within school budgets. However there is also likely to be an increased demand for exchange of information, and recent experience suggests that there will be costs in terms of teacher time, auxiliary time and paper.

Summary of Implications for Education Authorities

13.39 If an authority accepts these over-all arguments it must also have the will to ensure the resources to carry them out. These resources need not always be new or additional. We would argue the following implications, which must be taken into account.

(a) The structure and functions of the advisorate teams should be such as to encourage the co-ordination and continuities between primary and secondary seen as desirable. Positive integrative action may be required, in terms of staffing resource and available finance allocations, and specific allocation of responsibility for leadership of 10 — 14 development work in the advisorate team is necessary.

(b) Authorities should plan with Colleges to release teachers for those courses (set out earlier in this chapter) most likely to facilitate integrative or co-ordinated activity in schools at 10 — 14. The opportunities available in a properly co-ordinated probation period for all new teachers should be the subject of special attention.

(c) Key teachers involved in the organisational arrangements we set out in Chapter XII for secondaries and associated primaries should be the target groups for such courses.

(d) Wherever possible and appropriate in courses or in authority-organised seminars, working parties or development groups, primary and secondary teachers should be enabled to work together for related or common ends, often in regional/divisional teachers' centres, resources centres or Regional Development units as set out in the proposed National Plan[7] for microcomputers in Scottish schools.

(e) Staff development is a complex matter. It is not something done to or for practising teachers by others. The "learner" is not always on the receiving end, and is entitled to be treated with the respect due to a fellow-professional. Through effective use of advisers, staff tutors and other staff of this kind, authorities are in a unique position to enter into a partnership with their teaching staffs, enlisting aid from Colleges and elsewhere as required. Staff development is the major key to success in a situation where new resources may be limited. Authorities and central government must recognise this, and accept that it is not the same thing at all as seeking solutions on the cheap. It means the effective use of part-time or short-term staff to allow to the processes the time required for the permanent members of staff, whose renewed motivation and restored sense of trust will be the key to the commitment required. An authority which accepts this will require an articulated, publicly discussed, mutually accepted plan for the professional development of all its teaching staffs. The time is past for relying on individual or separate group initiatives, or isolated subject successes where these could be achieved.

IMPLICATIONS FOR THE CONSULTATIVE COMMITTEE ON THE CURRICULUM

13.40 The map of future curriculum reform in Scotland is complex. It involves ongoing development in virtually every area where the Consultative Committee on the Curriculum has been given the responsibility for advising the Secretary of State and education authorities, and it involves those areas — for example — the Further Education sector — contiguous with the Consultative Committee on the Curriculum's responsibilities.

13.41 Education 10 — 14 should be firmly and clearly located in the Consultative Committee on the Curriculum's own structure. The principles, conclusions and recommendations for action by this Report should be embedded in the educational system to create a continuing, progressive and coherent link with the positions taken by the Committee on Primary Education in *Primary Education in the Eighties* and with developments in the 14+ curricula. Such an aspiration calls for the establishment of a powerful committee to oversee and co-ordinate development work.

13.42 This group should go on to set up the deeper structure and support system, which implementation will require. This would include a national information centre, as part of the Scottish Curriculum Development Service, which would act as the Committee's executive arm and would undertake such tasks as:

(i) publication of "issue papers" (e.g. on timetabling in S1/S2).

(ii) publication of models — i.e. agendas for groups and sub-groups of schools embarking on the early rounds of inter-sector discussion:

(iii) publication of exemplars and case studies, i.e. — detailed accounts of good practice:

(iv) publication of newsletters and maintenance of an information exchange system.

13.43 A network for information exchange and curriculum support should be built on this basis. The structural proposals for such a network set out in the National Plan, *Microcomputers in Scottish Schools*, could usefully be applied to 10 — 14 needs[8]. The experience of CAST (the Curriculum Advice and Support Team) in helping developments associated with the 16+ Action Plan could be drawn upon to provide a similar service at 10 — 14. It is our conviction that if there is not an input of resources at a level at least the equivalent of the efforts made at 14 — 16 and at 16+, these initiatives will themselves be weakened, and a momentous opportunity to improve the quality of education in Scotland will be missed.

SUMMARY

Our recommendations have important implications for teacher education, for Regional and Islands authorities, and for the Consultative Committee on the Curriculum.

The process of teacher training should encourage primary and secondary teachers to work together and learn at first hand about the other sector's situation, to prepare for their work within a partnership of schools. Professional Studies elements within B.Ed. degrees and postgraduate one-year courses should include specific study of 10 — 14 issues,with school experience including visits to both sectors. In-service B.Ed. degrees should include strong 10 — 14 components with specific 10 — 14 associateships considered in the longer term. Clearly the way forward is not by attempting to convert secondary into primary teachers, or vice-versa. Instead, colleges of education should strengthen 10 — 14 elements in existing courses, and in future enable both primary and secondary teachers to study 10 — 14 modules on curriculum, assessment,and social education within an Advanced Diploma in Educational Studies. Such joint training activities will help teachers to share their insights and understanding.

We set out implications for Regional and Islands education authorities who should designate officers, probably advisers, to take 10 — 14 responsibility. 10 — 14 is such an important period for future attitudes to learning that these four years deserve special attention with regard to in-service provision, the work of advisory staff, and resources. The work of 10 — 14 planning groups will be enhanced by school-based in-service programmes, partly through co-ordinated closures of associated schools, when these are linked to their priorities. Additional help should come from experienced teachers, seconded by their education authorities as 10 — 14 Development Officers, with Scottish Education Department support. The education authorities require an agreed plan for developing their teachers' professional skills, and orchestrating and monitoring development to ensure cost-effective use of development procedures.

We propose the setting up by the Consultative Committee on the Curriculum of a 10 — 14 Committee to oversee developments at national level, to co-ordinate regional developments and to establish a communications network and machinery located in SCDS to support schools and authorities, and to maintain the impetus of the development of Education 10 — 14 in Scotland.

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CHAPTER XIV

CONCLUSIONS AND RECOMMENDATIONS

14.1 A young person's experience of education should be coherent, continuous, progressive (2.6). This is not easy to achieve in the 10 — 14 period because of the involvement of different institutions and many teachers (2.2 – 2.5; 2.7 – 2.9); because of different assumptions about learning and teaching (2.10 – 2.19);and because of pressure on a crowded curriculum (2.20 – 2.21).

14.2 Given the complexity of the issues, a long term strategy is called for involving all teachers of P6 — S2 classes and the agencies which support these teachers (2.27).

14.3 While schooling at 10 — 14 must build upon earlier learning in primary schools (3.2 – 3.3) and prepare for the 14+ curriculum (3.5 – 3.10), it should be a worthwhile experience in its own right (3.11), sensitive to the physical, emotional, intellectual and social development of this age span (3.12 – 3.16), encouraging the active involvement of the learners (3.16), and recognising the importance of the imagination in making sense of experience (3.18).

14.4 Schooling at 10 — 14 should be designed to contribute to a range of capacities and attitudes set out as 'desirable outcomes' at paragraph 3.21.

14.5 In this age range, the establishment of positive attitudes to learning is of particular importance (3.23).

Curriculum Design 1

14.6 The curriculum at 10 — 14 should be common and shared by all pupils (4.1).

14.7 It should continue to take place within the familiar framework of primary and secondary schools (4.16 – 4.20).

14.8 Detailed planning of the curricular experience should be undertaken by teams of teachers from both sectors operating within agreed policy guidelines and with support from, and accountability to, the education authority (4.2 – 4.5).

14.9 To enable leadership to be given at school level, a more generous allocation of time for curriculum development should be given at assistant head teacher level in both primary and secondary schools. The basis for appointments at this level should be reviewed (4.12).

Curriculum Design 2

14.10 The learning experience offered in school should acknowledge and build upon the learning which takes place in the home and community (5.2–5.9).

14.11 Since the learners are active in the process of making meaning, schools should as a first priority develop the skills and capacities involved in active learning throughout the curriculum (5.10 – 5.11). These skills and capacities are: language development through active use (5.14 – 5.22); co-operative learning (5.23 – 5.27); independent learning (5.28 – 5.32); skills of information finding including computer use for accessing data (5.32 – 5.35); learning to learn including study and planning techniques (5.36 – 5.39); problem-solving, investigation and reasoning (5.40 – 5.46); social competence (5.51 – 5.57).

14.12 Where learners have not developed adequate competence at an earlier stage, tuition in keyboard skills should be available in S1 (5.35).

14.13 We recommend that learners be given every opportunity to construct their own understandings and, through recognising that different kinds of questions have different kinds of answers, to appreciate the distinguishing features of academic disciplines (5.47 – 5.50).

14.14 We recommend that teachers monitor, as far as possible, 'the hidden curriculum' to ensure congruence between the intention of the teaching and its actual effects (5.58 – 5.69 and Appendix A).

14.15 We commend the practice of grouping learners in mixed ability classes (5.70 – 5.81).

14.16 We commend the practice of involving teachers of children with recorded special education needs in the process of curriculum planning (5.82 – 5.83).

Curriculum Design 3

14.17 We describe the range of the curriculum in terms of nine aspects of experience which should receive balanced attention, and which can be developed in a variety of ways (6.3 – 6.4).

The World of Inner Experience

(i) Learners should become aware of their own and others' subjective experience as a way of understanding their own and others' behaviour (6.6 – 6.11).

Living Together in a Community and in Society

(ii) Learners should study what is involved in living together in a community and society. Economic, geographical, political, historical and sociological concepts, and their associated skills, should be developed through appropriately selected topics for investigation (6.12 – 6.17). The local environment and aspects of wider Scottish society are essential components, as are opportunities to encounter themes of contemporary social concern (6.21).

Learning to Understand the Physical and Natural World through Science

(iii) Learners should develop their understanding of the physical and natural world through science (6.23), the "discipline of applied curiosity" (6.25) and the secondary school should deepen this experience through active enquiry and thought, even if this means a reduction in content covered (6.27).

Understanding and Using Mathematics

(iv) Learners should develop mathematical understanding. There should be emphasis on practical applications and on the communication of meaning (6.29 – 6.33). Consequently, mathematical understanding should be developed wherever appropriate in the curriculum (6.33). The constructive use of both calculators and micro-computers is commended (6.36 – 6.37).

Developing Practical Skills

(v) All learners should develop practical skills, including designing, making and using artefacts, in circumstances in which thought and action work together to a purposeful end (6.39–6.42). Practical problem-solving is commended as the basis for technological activity (6.48) which should be located broadly across the curriculum (6.49). Computers should be employed in this activity (6.50).

Physical Development and Well-being

(vi) Physical development and well-being should be promoted by physical education from 10 to 14 (6.53) in the context of the 'health-promoting school' (6.55) where issues such as smoking, alcohol misuse and drug abuse are dealt with as part of a health education programme rather than as isolated crises (6.55). The importance of sex education at this stage of development is stressed (6.60 and Appendix B).

Expressive and Appreciative Activity

(vii) Learners at 10 — 14 should have extensive opportunities for responding creatively to new experiences and for externalising their feelings in varied kinds of artistic expression (6.61 – 6.63). The value and importance of drama is strongly commended (6.65 – 6.66).Expressive activity importantly influences, for the good, the learners' attitudes to virtually all areas of the curriculum (6.68, 6.70 – 6.71).

Communicating

(viii) Learners should develop awareness of how language works both as system and as social phenomenon in order to become more effective language users (6.73 – 6.82). An encounter with non-native languages contributes significantly to this end (6.83 – 6.84). Some study of a non-native language may be appropriate in primary schools provided this is firmly embedded in a larger context for learning (6.85). Learners should develop an understanding of how meanings are made and carried by the mass media of communication, and should develop skills of graphical communication in contexts of authentic use (6.88).

Religious Awareness and Moral Development

(ix) All pupils should have opportunities to develop and increase their understandings of the religious dimension in human experience (6.91). Moral education should permeate the curriculum in the sense that discussion of moral issues should occur whenever appropriate (6.93 – 6.94) and should particularly involve issues of immediate concern to pupils. Some involvement by pupils in school government is desirable (6.95).

14.18 The curriculum should offer opportunities for choosing. Choice should be *within* aspects of experience, not between them. Opting out of any significant area of learning is not acceptable (6.96 – 6.97).

Curriculum Structures

14.19 Curricular structures are 'ways and means', not ends in themselves, and should be designed to subserve good learning and desirable outcomes (8.13). To this end, existing structures should be modified gradually, with teachers themselves taking a leading role in change and innovation (8.1 – 8.9).

14.20 Development must start from where a group of schools actually stands (8.10) and should be based upon a review of the established custom in a group of schools (8.14 – 8.19). Review should take into account curricular areas not well established (8.24) and the balance among existing subject areas. In some secondary schools the amount of time given to English, mathematics and a modern language appears excessive (8.21) and the practice of reducing the time in second year for some subjects at the expense of others is not justifiable (8.22). Account has to be taken of the position of Gaelic (8.25) and of community languages (8.26).

The Primary Sector

14.21 Primary schools should review how far their existing policies and practices enable learners to gain access to all the nine aspects of experience, through the permeators, and to develop essential learning skills in an appropriate climate for learning (8.30).

14.22 Development of learners' skills, understanding, and attitudes should not be left to chance : schools should set policies for developing these systematically through a range of active approaches to learning (8.44).

14.23 Curriculum progression for every learner should be the outcome of shared understanding by teachers who visit, and contribute to teaching, each other's classes within the partnership of schools (8.45).

14.24 Partner schools should work towards agreed policies for their main aims with respect to understanding, attitudes and skills (8.46).

The Secondary Sector

14.25 We recommend that secondary schools manage time in three main categories:

(i) Tutorial or 'home-base' time (8.49 and 11.13 – 11.21).

(ii) Flexible time (8.50).

(iii) Standard school time (8.51).

14.26 The distribution of standard school time should be such as to promote the desirable outcomes through the aspects of experience, but current curriculum categories can be retained to achieve this end (8.52 – 8.54).

14.27 We propose that an element of standard school time be given to languages as a single grouping. The time devoted to different kinds of language work within this grouping is a matter for individual schools to determine. We recommend that this time be limited to ensure full access to other aspects of the curriculum (8.56 – 8.58).

14.28 We recommend that the use, application and, where necessary, the teaching of mathematics be co-ordinated across the curriculum (8.69).

14.29 We illustrate (8.71 and Figure 5, Page 95) a possible distribution of time following review, and the establishment of effective language work and mathematical applications across the curriculum.

14.30 We recommend evaluative review of the quality of learning in terms of the ideas in Chapter V of this Report (8.75 – 8.78). In this review special attention should be given to pupils with learning difficulties (8.79) and language for learning (8.80).

14.31 We commend the timetabling policy of Strathclyde Region to enable co-operative teaching to be practised (8.79).

14.32 We recommend the establishment of a co-ordinating team to review the range and balance of the curriculum, and to share information among participating teachers and other interested parties (8.81 – 8.85).

14.33 Secondary departments should review their contributions to the aspects of experience in order to identify:

(i) unique and essential elements;

(ii) overlaps;

(iii) recurring topics or themes (8.86 – 8.89).

14.34 We draw attention to four ways in which new curricular provision can be made (8.86):

(i) Integration into existing departmental courses (8.94–8.100)

(ii) Curriculum inserts (8.101–8.103)

(iii) Dissemination through the curriculum (8.104–8.106)

(iv) Collaboration (8.107–8.120)

14.35 Using such procedures, a possible structural model is illustrated (Figure 7, Page 109).

14.36 We commend the *rotation* of subjects, provided collaboration is not impaired (8.123 – 8.124).

14.37 We commend for consideration the suspension of the routine timetable (time out) to enable planned out-of-school events to take place; or for special in-school events (8.126 – 8.128).

14.38 We commend the use of time blocks longer than the traditional 40 minute period (8.125).

14.39 We commend for consideration, on the basis of growing experience of collaboration, a move towards a modular structure of the S1-S2 timetable (8.129 – 8.143).

Primary — Secondary Collaboration

14.40 We commend the joint review of curriculum of all schools in a primary-secondary grouping (8.144 – 8.147).

14.41 We recommend that the number of areas for curriculum development within any one group of schools is kept to a manageable number, and that the education authority negotiates with each group so that a spectrum of curricular areas is dealt with, and cost-effective development can be achieved (8.148 – 8.153).

Learning, Teaching and Assessment

14.42 Learning is the process of acquiring skills and understandings for an effective life in society, and its central features are activity and purpose (9.1 – 9.2).

14.43 Though learning is natural to every child, it is necessary to promote a willingness to learn by using teaching/learning styles which place the learner in an active role in contexts which demonstrate significance (9.3 – 9.9).

14.44 Structured learning sequences are commended, provided they are offered to well motivated learners, and retain flexibility of outcomes (9.10 – 9.12).

14.45 Since the style of learning is largely determined by the teaching style, teachers should use a variety of approaches (9.13 – 9.14).

14.46 The management of resources, the promotion of resource-based learning, and the promotion of extended reading are commended as important elements in teaching (9.15 – 9.18)

14.47 The professional autonomy of teachers is enhanced by collaborative contribution to the overall learning experience of pupils (9.19 – 9.21).

14.48 For teachers to balance autonomy with the need for curriculum continuity, coherence and progression they should agree on skills, concepts, and understanding to be developed as well as negotiating about their intentions on content (9.20).

14.49 We commend co-operative teaching, involving learning support specialists and subject specialists, and co-operation between teachers in upper primary and secondary specialists, so that specialist insights are available within primary programmes of work (9.22 – 9.24).

14.50 Attention to individual needs is a key part of all learning and teaching, and the S1-S2 class tutor or base teacher, with primary schools' pupil care, can alleviate individual learners' difficulties (9.25). Specialist learning support teachers also have an essential role within their partner schools' 10 — 14 planning groups. We commend a structure for 10 — 14 which involves those teachers' working in both primary and secondary schools (9.26).

14.51 Successes and failures in learning are apt to be cumulative (9.27) and a pupil's self-image is a powerful influence in that process. Every effort should be made to avoid creating in pupils a poor image of themselves as learners (9.27 – 9.29).

Assessment

14.52 Assessment is integral to the process of learning and teaching and should analyse why children succeed or fail (9.30 – 9.31). Its goal is to provide information to help teachers and pupils make decisions (9.32) that should contribute to achieving progress for the individual (9.34), enabling teachers to correct difficulties and motivate pupils through feedback (9.35 –

(9.36). Diagnostic assessment should be used both to predict potential areas of difficulty and to obtain information about learning problems (9.49).

14.53 Assessment can also provide information which clarifies a pupil's choice of courses at the end of S2, especially if pupils can take part in monitoring their own progress through self-assessment (9.38). Self-assessment, more generally, forms a central part of learning to learn across the 10 — 14 years (9.44).

14.54 Evidence from assessment is fundamental for teachers' evaluation and development of their curriculum, and this is another "positive contribution of assessment to the teaching and learning process" (9.39 – 9.41).

14.55 Assessment of pupils' skill and understanding should occur in the context of their learning and should include their ability to apply that learning in different contexts (9.46).

14.56 Criterion-referenced assessment, aiming to describe what pupils know and can do, is fundamental to promoting effective learning and teaching (9.47).

14.57 We commend recent research in practical assessment which encourages teachers to develop techniques that clarify the learning processes. More research of this kind is essential (9.53 – 9.54).

Recording and Reporting

14.58 The most important feature of record-keeping is that teachers can act on the information kept (10.2). Record-keeping has two components — within the class (for use by teachers and pupils) and as a basis for passing information between teachers and schools, as well as from schools to parents (10.3). It is valuable only if the information is effectively used to ensure appropriate education for the individual (10.8).

14.59 Recorded information should be clearly based on evidence related to pupils' work and should indicate possible educational action (10.8).

14.60 We reject the "fresh start" view of primary-secondary transition, and favour emphasising continuity and progression in pupils' learning experiences (10.11). Efficient reporting of information from primary to secondary should form part of developing curriculum liaison arrangements, (10.9 – 10.10; 10.19) and associated schools should agree on the nature of that information (10.20).

14.61 Clear structures should be established in secondary schools to ensure that information from primary schools is accessible and effectively used (10.21).

14.62 The demands of reporting to several audiences should not lead schools to use information derived from criterion-referenced assessment to emphasise comparisons between learners or in a norm- referenced way (10.12).

14.63 We recommend revision of the Primary Pupil Progress Report and of the secondary report form (10.13 – 10.14).

14.64 Schools should ensure there is effective contact between teachers and parents, as part of the wider process of liaison between school and home. Discussion between teachers and parents should also form part of the reporting process (10.16 – 10.17).

14.65 Secondary schools should enable guidance teachers to identify children with problems that need immediate attention, notably problems involving their physical and mental health (10.21).

14.66 Where a pupil moves to a secondary school other than the one associated with his primary, his previous school should send as full a report about him as to their associated secondary (10.24).

14.67 Further work on computer assisted reporting should be undertaken, provided that such reporting facilitates flexibility of response (10.30).

Pupil Care

14.68 A policy for pupil care is an essential part of schooling to attend to pupils' social, emotional and medical needs, and to help in easing transition (11.1).

14.69 Each school should have a written school policy for pupil care, which clarifies the roles and relationships of teachers, parents and outside agencies (11.3 – 11.4). That statement should explain clearly the procedures for dealing with issues such as child abuse within the wider context of pupil care (11.4).

14.70 Perceptions of indiscipline relate to expectations about pupils' behaviour. Schools' policies on discipline should therefore encourage a consistency of response to children's behaviour at 10 — 14 (11.5).

14.71 Schools should explain fully to parents the curriculum which they provide for 10 — 14 year olds. School councils should also participate in publicising both the value of parents' meetings with teachers and the ways in which parents can help their children work more effectively (11.8 – 11.10).

14.72 We commend the suggestions on transition arrangements in Strathclyde Region's Report, "The First Two Years of Secondary Education" (11.11 and Appendix D). In the process of pupils' induction to secondary education, there should be: appropriate procedures to gather and transfer information from primary to secondary schools; the fullest communication and explanation to parents; intervisitation by staff; and pupils' visits to secondary schools, planned by both primary and secondary teachers and providing adequate time (11.12).

14.73 In secondary schools each class, or smaller group, should meet daily a tutor or base-teacher whose role is to provide first-line pastoral and social care, and to take a supportive interest in the pupils' success as learners across the curriculum. Teachers in this role should be responsible to promoted guidance teachers (11.14 – 11.23)

Management of Education 10 — 14

14.74 We commend the idea that a secondary school and its associated primary schools should operate as a partnership (12.43 – 12.44).

14.75 Detailed management of the learning at 10 — 14 should be located as closely as possible to the classrooms where the learning takes place (12.2 – 12.10), though the function of the education authority remains crucially important (12.11, 12.14 (i) and (ii), 12.35 – 12.42).

14.76 Field work suggests that coherent, continuous and progressive programmes of work 10 — 14 require education authority commitment and resource support; the involvement of class teachers with outside support; the setting up of working parties with specific remits within a partnership of schools; continuous monitoring of curriculum; and staff intervisitation (12.12 – 12.14).

14.77 Curriculum co-ordinating teams should be set up in each school within a partnership. In primary schools, the head teacher, assistant head teacher, and teachers of P6 and P7 should be involved. In the secondary a team of at least six teachers under a co-ordinator, with powers of consultancy and co-operation, should be established (12.17 – 12.20).

14.78 From these teams, a 10 — 14 co-ordinating team should be established involving at least one representative from each primary school and the nucleus of the S1-S2 team (12.21 – 12.22). Variations in this basic model to suit local circumstances are suggested (12.23 – 12.26).

14.79 The functions of each 10 — 14 curriculum co-ordinating team should be:

(i) to ensure that the partnership of associated schools offers pupils a coherent, continuous, and progressive educational experience;

(ii) to make decisions about change and innovation;

(iii) to set up working parties as necessary;

(iv) to review and evaluate all practice in the 10 – 14 stage;

(v) to advise on appropriate aims and objectives and the balance or emphasis of objectives across the 10 — 14 curriculum;

(vi) to attend particularly to cross curricular responsibilities;

(vii) to identify staff development needs;

(viii) to arrange staff intervisitation;

(ix) to be responsible for all induction and transfer arrangements;

(x) to encourage and arrange joint curricular and social activities among the schools (12.27).

14.80 Each school should, as a principle, have autonomy within agreed guidelines (12.28).

14.81 The 10 — 14 curriculum co-ordinating teams should not attempt to develop all aspects of education 10 — 14 simultaneously; they should identify priorities for development, and submit a long term programme to the education authority (12.28).

14.82 Education authorities must provide support and commitment to curriculum co-ordination at 10 — 14; curriculum co-ordinating teams must be accountable to their education authorities (12.35 - 12.42).

14.83 We draw attention to the very important staff development and training benefits that derive from membership of the co-ordinating team and its working parties (12.34).

Implications for Colleges of Education

14.84 Colleges in pre-service courses should seek to lay a foundation of awareness of the ideas explored in this Report, particularly the contribution the individual teacher makes to the whole curriculum and to the pastoral care of pupils. Teachers in training should experience the learning processes recommended in this Report, not just hear about them (13.2 - 13.8).

14.85 In B.Ed. and in post-graduate primary courses, Professional Studies should include elements leading to awareness of the 10 — 14 dimension. Primary students should visit secondary schools (13.15 (a) and (b)).

14.86 In post-graduate secondary courses, similar arrangements should be made (13.15 (c)).

14.87 Joint meetings and seminars of students working for primary and secondary qualifications should be arranged (13.15 (d)).

14.88 In-service B.Ed. courses should contain a strong component dealing with 10 — 14 issues (13.17 (a)).

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14.89 There should be a review and extension of Associateships to provide a special qualification relevant to the 10 — 14 age range (13.17 (b)).

14.90 Some contribution might be made through supplementary courses leading to qualifications in secondary subject areas (13.17 (c)).

14.91 An Advanced Diploma in Educational Studies could bring primary and secondary teachers together for high-level joint training (13.17 (d)).

Implications for Education Authorities

14.92 Authorities should establish and maintain structures for co-ordinating curriculum 10 — 14 at school level and among partnerships of schools, with primary and secondary teachers working together in planning groups and with supportive commitment in directorate and advisorate time (4.2; 12.14; 12.16 – 12.34; 12.39 – 12.42; 13.20; 13.26).

14.93 Appropriate in-service or extended training should be provided, linked to the negotiated priorities of local co-ordinating teams. School closures for training purposes might similarly be linked (13.21 – 13.24)

14.94 Authorities should designate advisers with special responsibility for 10 — 14, and use 10 — 14 issues to harmonise the work of primary and secondary advisers (13.28 – 13.30).

14.95 Experienced teachers should be seconded to help local co-ordinating teams and their working parties to develop their own expertise. National funding should be made available for this purpose (13.31).

14.96 Staffing must be at a level adequate to permit teachers to take an active part in curriculum and professional development (12.14; 13.33 – 13.35) and intervisitation (13.37). (See also 13.39.)

Implications for the CCC

14.97 The CCC should locate a 10 — 14 Committee of some weight in its own structure to co-ordinate development work. It should be responsible for establishing an information centre,a clearing house, and a network for communication in association with education authorities (13.41 – 13.43).

Topics suggested for Research and Development

14.98 (i) Independent learning: the development of techniques and methods (5.28 – 5.32).

(ii) Learning to learn: techniques to enable pupils to extend their own learning skills (5.36 – 5.39).

(iii) The development of teaching techniques for problem-solving and reasoning (6.51).

(iv) Language development and awareness through mutually supportive teaching of English and non-English languages (8.107).

(v) Practical assessment techniques (9.54).

(vi) Computer assisted reporting (10.30).

(vii) Ways and means of effective and cost-effective spreading, sharing and implementing innovations (12.42).

APPENDIX A

UNCOVERING THE HIDDEN CURRICULUM

The Teacher in the Classroom

1. Which pupils do I most readily identify with?
2. Which pupils do I find it most difficult to sympathise with?
3. Do I give as much praise as blame?
4. How much time do I give my pupils to be wrong in?
5. Do I patronise?
6. Do I admit when I'm wrong or don't know?
7. Do I lose my temper? If I do, what triggers it?
8. What genuinely pleases me in class?
9. What makes me laugh in class?
10. When is my attention and concentration most engaged?

Teachers Talking Together

1. List in order of importance favourite content areas, topics, teaching situations. Discuss the common and the disparate features of the lists and the implications they suggest.
2. List in order of intensity:
   (a) classroom outcomes which elicit your approval
   (b) classroom events which call forth your disapproval

Again, compare the lists which are produced and talk through the similarities and differences.

3. Volunteers describe the most memorable classroom happening of their careers and their responses. Where, on a scale from "happy" to "horrifying", would they place their chosen event and how far would others agree?

4. A volunteer offers an account of a recent experience which put his/her professional abilities under strain. What are the reactions of others?

   Was this a situation which demanded a school dimension to be properly handled?

The School as an Educational Force

1. How far does the school allow the developing young person to express his/her individuality? If there is thought to be a limit to opportunities for such an expression what is it, and who has decreed it?

2. Will young people leaving or enrolling in this school have to make adjustments in their future learning behaviour? What are these likely to be? Why?

3. What do we do to encourage a feeling of belonging, of representing and being cared for by the school? Is the balance of obligation — the pupil's and the school's — the right one?

4. How far do we go in involving our pupils in confronting communal problems (e.g. corridor discipline, playground litter etc.)? Do we ask their opinion and entertain their proposed solutions? Are "problems" only those issues which inconvenience us as school managers?

5. Do we offer sufficient opportunity for participation in school government by pupils? Are any such arrangements we have open to accusations of token gestures?

APPENDIX B

The following statement extracted from *School Health Education, Sexuality and Mental Handicap* (Scottish Health Education Group/Committee on Special Educational Needs 1985), may, with appropriate modification for children in the age group 10 — 14, act as a starting point for discussion in planning groups.

THE GOALS OF A SCHOOL SEX EDUCATION PROGRAMME

The needs of the pupils should determine broad goals for the programme of sex education, which belongs in a wider context of health education:-

1. To provide graduated learning experiences appropriate to the needs of the pupils, in order to assist them to come to terms with their own sexuality.

2. To enable pupils to learn about, and as far as possible cope with the developmental changes of adolescence.

3. To help pupils build warm and loving relationships within the home and outside the family and to prepare them for permanent adult relationships.

4. To acquaint pupils with socially acceptable behaviour, and the social and legal constraints on sexual behaviour.

5. To provide pupils with knowledge of appropriate agencies within the community which can be used as resources such as family doctors, family planning clinics, the Brook Advisory Centre, and the Churches.

6. To enable pupils to communicate their feelings about themselves and for other people in an appropriate, acceptable way.

7. To enable pupils to make informed decisions on expressions of sexuality including masturbation, intercourse, marriage, pregnancy and family planning.

APPENDIX C

THE ORGANISATION OF RESOURCES IN SECONDARY SCHOOLS AND THE QUALITY OF THEIR USE: TEN POINTS FOR ASSISTANT HEADTEACHERS *

Basic questions

Listed below are points to which consideration should have been given in all schools:

(1) Is there a mechanism for encouraging staff to plan the appropriate linking of resources to courses through regular discussion at departmental meetings or boards of studies, or at staff meetings?

(2) Does the responsibility for the school library include a responsibility to encourage the use of the library as a resource for courses? Do departmental staff use the books that they recommend for the library, or which are held in the library in their subject areas? Do they facilitate pupil use of the library for curriculum ends?

(3) Is there a list of the radio/video recordings being made or retained in the school, together with details of the courses to which they relate or with which they are being used? Is there a list of films being hired or borrowed during each term, and of the staff who have requested these? Are these lists readily accessible and do staff know how to get access to the materials?

(4) Are catalogues of materials (for example from resources centres or from the Central Film Library) available centrally? Does the system for ordering films allow for co-operative use as well as economy? Do the staff know of the catalogues?

(5) Is there a central equipment list? Does it show where equipment is normally located? Have all the staff seen the list? Do they know about it and the arrangements for loan, purchase, maintenance or replacement of equipment, bulbs and fuses?

(6) Are there established and effective procedures for requesting and obtaining replays or projections within the school, or for requesting the services of a technician/auxiliary, or for booking the AV room or the use of the microcomputer? Do staff use these?

(7) Have the pros and cons of centralised versus decentralised purchasing, or of co-ordination of information on resources been considered in the school?

(8) Who in the schools knows about the facilities available at, for example, specific teachers' centres, through the Curriculum Development Service, at the Scottish Council for Educational Technology, at the Scottish Microelectronics Development Programme, through colleges of education, and via museums and other resource agencies? How is this knowledge made available to the staff?

(9) Who ensures that new staff are aware of the facilities in the school and can use the audio-visual and microcomputing equipment that is provided?

(10) Who encourages and enables staff to consider the quality and the appropriateness of their use of resources in relation to the curriculum and the needs of their pupils?

While the answers may differ from school to school and certain questions may apply to some schools more than others, all raise important issues, most particularly the first and last questions.

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* Extract from *Learning and Teaching in Scottish Secondary Schools: The Contribution of Educational Technology*. HMSO, 1982.

APPENDIX D

TRANSITION FROM PRIMARY TO SECONDARY SCHOOLS. GUIDELINES ON OBJECTIVES AND PROCEDURES *

Objectives of Transition Schemes

1. To ensure that every pupil in P7 has experience of the layout and organisation of the appropriate secondary school before entering S1.
2. To ensure that every pupil in P7 and the parents are informed of all the circumstances and requirements of the secondary school(s) which will affect the pupil in S1.
3. To ensure that every pupil in P7 has some acquaintance with those members of the secondary school staff who have responsibility for S1 classes.
4. To ensure that arrangements are made for a process of consultation between primary and secondary school teachers and thus help create a curricular continuity from P6 to S2.

Recommended Organisational Arrangements

A Administrative Procedures:

- (i) A series of planning meetings throughout the session involving the head teachers of primary and secondary schools.
- (ii) Meeting(s) for parents in primary school.
- (iii) Meeting(s) for parents in secondary school.
- (iv) Issue of booklet/handbook concerning S1 at parents' meeting prior to transfer.

B Familiarisation Processes:

- (i) Visits of pupils to secondary school in May or June from one to five days in order to follow an S1 timetable; one of the visits to involve all the primary pupils transferring to enable them to meet one another.
- (ii) Visits of S1/S2 teachers to the primary schools to provide familiarity with P7 organisation.
- (iii) Visit(s) of P6 and/or P7 teachers with their pupils to follow classes through S1 timetable.
- (iv) Visits of guidance staff to primary school to meet P7 pupils, and particularly to identify pupils likely to adjust poorly to the secondary school.
- (v) Visit(s) of secondary head teacher and senior promoted staff to primary school to meet P7 pupils.

C. Curricular Liaison

(i) Visits of principal or assistant principal teachers to primary schools; particular care will require to be exercised where a primary school feeds to 2 secondary schools.

(ii) Visit(s) of appropriate secondary staff to primary school for early consultation on children with learning and other difficulties to ascertain the nature of the help so far provided and to determine the degree of support required in S1.

(iii) Regular consultation between P7 and S1 teachers, with particular attention to course content and methodology.

(iv) The supply of portfolios of pupils' work to secondary departments.

(v) Supply of comments (written) on pupils' strengths and weaknesses; such comment to be open to parents.

(vi) Regular curricular liaison among associated primary schools with the aim of encouraging continuity in the P6-S2 curriculum.

(vii) Follow up by primary staff on pupils' progress in S1, with a view to identifying under-achievement.

D Supply of Information at Transfer:

(i) Maintenance of standard forms in current use for conveying curricular, family, medical information.

(ii) Information supplied in discussion, e.g., with guidance and remedial staff. In the interests of the pupils some personal and confidential information may have to be unwritten but the need for parents to be involved in consultation at the transition stage should be fully recognised. All written information must be available to parents on request.

Social Links

(i) Encouragement of P6/7 participation in social, cultural, sporting activities by secondary school.

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* Strathclyde Regional Council. Department of Education. *Report on the First Two Years of Secondary Education. Working Group on Secondary Education (S1/S2).*

APPENDIX E

A 10 — 14 WORKING PARTY AT WORK

1. The emphasis of this Report, and most strongly in Chapter XII, has throughout been on "autonomy within guidelines" — in other words on the essentially local nature of curriculum planning. Our vision is of particular teachers engaged in negotiating appropriate programmes for known pupils in familiar circumstances.

2. In consequence, any generalised illustration of the practical implications of this process which we offer is bound to beg many questions. Despite the artificiality of exemplification in a vacuum, however, in this Appendix we attempt to "talk through" the situation which we envisage as confronting local groups of teachers engaged on the detail of designing an aspect of the teaching and learning programme 10 — 14.

3. Let us suppose then that a co-ordinating team has asked a working party of teachers from associated primary and secondary schools to advise on the area of provision which deals particularly with that aspect of experience which we have categorised as "understanding the physical and natural world through science".

4. The teaching of "science" in the primary school has always presented teachers with problems — problems of definition and problems of scale. What in the context of primary education, *is* science, and how much of it and to what degree of abstraction should be put before children before they encounter the subject in the secondary school? We know that these are very worrying questions for most primary teachers; and we know that few science specialists have been able to help their colleagues in the other sector to find clear answers. One of the best situations currently to be found is likely to be where primary pupils at P6 and P7 have been engaged in observing, measuring and recording in the integrated context of "environmental" projects and come thereafter to the secondary science programme with the eager anticipation of those about to be admitted to important new mysteries.

5. This state of affairs is one of which we thoroughly approve. It is precisely this mood of active readiness observable in early S1 pupils as they approach new "subjects" that we suggest as the product of a well thought-out 10 — 14 programme. Unfortunately, as secondary teachers will confirm, the original zest normally fades by 14 and for many pupils the expectations are unsatisfied. If, then, the pattern — from exploration to more specialised investigation — is the right one, the one which seems to match the intellectual growth of young people, what goes wrong? This is the question from which reshaping of the process from 10 — 14 has to start.

6. Three entry points suggest themselves. Is the "environmental" approach to scientific learning in the primary classroom too haphazard; should there be more development of

a science syllabus in P6 and P7? Is the science programme in S1 and S2 too rigorous, too crammed? And thirdly, and stemming from those first two, is enough done to dovetail the work in primary and secondary classrooms?

7. These preliminary thoughts might seem to be hinting at some dangerously mechanistic solutions. They are not. We firmly reject any notion, however plausible, of "tightening up" the scientific work in the primaries by moving S1 topics back into P7 in order to create space in the S1 science syllabus, and bring specialists into dialogue with primary colleagues. Such ideas do nothing to remove the inhibitions of the non-specialist primary teacher and they perpetuate the dominance of subject over pupil. A planning group has to go far beyond manipulation of content if good operational principles are to be established in primary as a basis for review in secondary.

8. A good starting point for discussion of principles within a planning group would be the publications of the *Primary Science Development Project*[1]. Discussion of these booklets, which deal with school policies for science, links with other areas of the curriculum, class organisation, use of resources and other important topics, would allow a planning group to review the position within associated primary schools and identify priorities for development within the 10 — 14 context. Helpful suggestions for the use of the Primary Science Development Project booklets can be found in the *Report of the National Course on the Primary Science Development Project*[2].

9. The principles of the 10 — 14 programme we have suggested propose that the focus of learning is learners in interaction with their social and physical environment. The pupils must *do* and *discuss*. This should be planned to allow pupils to develop their growing powers of abstraction in meaningful contexts and thereafter to apply the results of their abstract thinking to new concrete experiences. For this they will need a carefully selected range of skills and concepts, in which the curriculum will provide repeated and widening practice, this practice ideally being in the form of applying skills and ideas in the solution of problems.

10. Thus, primary and secondary teachers will not only have to reach decisions on what is taught but will also have to agree on why, when and how.

11. The key might well lie in a term we have used several times already — the environment. In the literal sense of weather, the climatic surroundings of our lives, it is readily observable, and its influence on how we live our lives offers — it seems to us — good curricular terrain on which to plot a progression from generalised interest to specialised concepts, from concrete concerns to abstract ideas, from those ideas back to further experimentation and so on to developed hypotheses. Such a progression, needless to say, would ideally span the entire primary-secondary experience, but the 10 — 14 sector demands the finest tuning.

12. To be more specific, children from P1 (and often before formal schooling begins) are presented with frequent opportunities to talk about, read about, write about, sing about the weather; they watch it, paint it, record it, measure it. This — and so it seems to them — is a proper concern: the changes of the seasons, the moods of nature, are a source of interest, delight and apprehension to pupils of primary school age. When you are under 12 the state of the weather can more directly affect your daily concern than possibly at any other stage of your life. It must, therefore, be a very rare primary teacher who does not see the environment in this narrow sense as one of his/her principal learning resources.

13. Consider, however, what happens to this resource in S1 and beyond. Its many facets are parcelled up and allocated to separated areas of study. The physical manifestations (themselves isolated) become the property of science, weather as a feature of man's interaction with the wider environment is almost exclusively the interest of geography, while appreciative responses are left to the aesthetic subjects. The holistic view is shattered too early, and the move to deeper levels of understanding is undertaken haphazardly and with no occasion for the bringing together of new perspectives. The planning process we advocate would primarily be concerned with restoring the continuum of interest and monitoring the simultaneous widening and deepening of knowledge as it developed across the expanding curriculum.

14. The process might be helpfully illustrated if we consider how the group might plan the curricular deployment of the study of the basic constituent of climatic change — water. From the earliest stages onwards, water and its properties form what most primary teachers would endorse as an appropriate context for learning. Experiences up to P6 should have so developed children's concepts of water in its natural state that by age 10 they should be able to come, within the wider framework of weather studies, to the consideration of changes of state — condensation, evaporation, freezing and melting.

15. If this seems to those involved in the planning process a reasonable proposition, then decisions of the kind we suggested earlier in this chapter have to be made: what ideas, which skills have to be taught and what are to be the methods used. We would stress at this point that the group must recognise the commitment required in terms of group support of individual teachers and of the need to adapt existing programmes in the light of these jointly planned experiences. The decisions taken must be agreed — not, for example, simply dictated by the secondary science representative — and the implications of the decisions accepted. (The need to monitor and review thereafter would, obviously, be an important implication).

16. Let us assume that changes of state of water would, in the group's opinion, be best observed, starting in P6, by a planned programme which would incorporate:

    (a) the observation and recording of weather over a lengthy period, with particular attention to misty, wet and snowy weather

(b) discussion (including expressive responses), further observation, further discussion in order to arrive at a classification of particular attributes of weather that exemplify the changed state of water

(c) further observation made at home of, for example, boiling kettles, condensation in the bathroom, de-frosting the fridge, resulting in further abstraction of the concept of change of state

(d) consideration (by various means,including independent research and artistic expression) of other climatic environments where such changes severely affect people's lives — polar and tropical regions etc.

(e) further consideration and exploration of the role of weather in its various states in matters of everyday concern: water as power, water as essential for the maintenance of life, water as it affects travel and mobility, pollution etc.

17. We think it important to note that a programme of this kind is thought of as *starting* in P6: it would be equally important not to think of it as completed by S1. The points of interest, the sub-topics that pupils themselves develop should cue later extension of the scheme in secondary school. In addition, mapping out the course of the programme would entail definition of the experiences to be provided for pupils: what kinds of measurement they will be asked to do, what records they will be asked to keep, what reading tasks will be presented, which areas of language development or enrichment they will be exposed to. It might be that the planning group will be able to make use of or adapt existing commercial material — *Science 5 to 13* or *Learning through Science* (both Macdonald) or *Look* (Addison Wesley), for example. On the other hand, having identified and agreed on tasks, the teachers concerned might elect, with the help of the local authority's support agencies, to construct their own teaching/learning resources.

18. And finally at this stage of corporate design the programme has to take account of the general principles we have stipulated as essential in the learning process from 10 — 14. Have pupils been afforded choice within the programme — choice of what to do or choice of how to set about tasks? To provide this freedom will necessitate making available a range and variety of alternative routes and of extension materials. Here again the value of group planning will be demonstrated, as it will when the programme is vetted for its contribution to pupils' general training in "access skills" — the knowledgeable use of information sources. In this latter respect, the study of the changes of state of water would offer a wide range of opportunities for the consultation of books, TV and radio reports and programmes — and, importantly, people outside school. Such a strong potential for independent research, moreover, would allow planners to build in ample occasions for presenting learning opportunities as problems to be solved and for allowing time for the kind of discussion and reasoning that helps young learners to a security in their acquisition of understanding.

19. If then the changes of state of water and the implications of these for the world children know are thus broached in P6, it would follow that subsequent learning situations should take account of what has been achieved.

20. At simple content level there may have to be adjustment to topics which deal with the environment and to areas of the science, home economics and social education programmes. Such adjustments would be made, not on the basis of "They've already done that" — but on the *positive* line — "Now that they have had that experience, what should be built on it?"

21. For example, the science specialist usually broaches the topic of "Solvents and Solutions" in S1. In the light of a P6 investigation of the changes of state of water, s/he has a number of options to choose from. S/he could spend more of the time allowed in the S1/S2 Integrated Science Scheme for teaching the changes of state in letting pupils re-examine what they did in P6 and speculate — in the light of their subsequent general experience — on scientific implications. In other words, time saved here on *facts* could be used to work towards *principles*.

22. Further, the science teachers could decide to have pupils move on to look at the behaviour of other liquids, or to concentrate on the notion of pollution. And knowing the investigative and laboratory skills possessed by the pupils at this point, and to what degree of confidence they possess them, teachers' planning will take account of the need to give further practice in existing skills and to introduce new experiences appropriate to the scientific way of knowing. (Indeed, while water and its properties have been selected as an example, it is likely that the other traditional S1/S2 science topics might have to be reviewed and brought into an alignment with the environmental concerns most readily expanded in the later primary years).

23. Simultaneously the geographer and the home economics specialist would pick up the threads of continuity. All involved would, of course, be aware of what others were doing and would make a point of cross-referencing. In this way coherence will attach to progress. Needless to say, planning for all subsequent learning should, as in our P6 example, be carried out against the matrix of the principles.

24. We must stress that in pursuing the example of the changes of water we are not proposing an exclusively 'centre-of-interest' approach to the curriculum 10 — 14, nor a concentration on one or two themes or topics. The curriculum will continue to be varied in its areas of study — how wide that range will be is for the determination of the co-ordinating team and its working parties. There will, however, be much more "fact-processing" by means of discussion, by the encouragement of independent learning and by the presentation of problems and possible solutions. The progressing

of the concepts and skills in specialised areas of knowledge will continue; as it moves on, however, it will be interpenetrated by insights gained in adjacent contexts and it will return frequently to the pupils' experience and be resourced by ample time for reflection and discussion.

REFERENCES

1. Moray House College of Education (1985) *Primary Science Development Project Booklets 1 – 8*. Scottish Curriculum Development Service: Edinburgh.
2. Moray House College of Education (1985) *National Course Report NC1 : Primary Science Development Project : The Way Ahead.*

APPENDIX F

STUDIES COMMISSIONED BY THE PROGRAMME DIRECTING COMMITTEE

Bain W H (1983) *Historical Roots of the 10 - 14 Curriculum: S1 and S2.*

Kidd J M (1984) *A Review of Transfer and Transition Practices in Other Systems of Education.*

Stimpson D (1983) *Teacher Education, Training, and Qualifications.*

Lorimer E (1983) *Remedial Provision in a Grampian Region Secondary School - Perspective of the Principal Remedial Teacher.*

Shiach D and Tawse M (1985) *Curriculum Liaison: 10 - 14, Mintlaw Academy and its Associated Primary Schools.* * Grampian Regional Council.

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* This paper was made available to the Programme Directing Committee by Grampian Regional Council. It is a full account of a project, which, through part of its life, had been monitored on behalf of the PDC by Mrs Wilma McDonald, Aberdeen College of Education.

APPENDIX G

CONSULTATION, ADVICE, EVIDENCE

The terms of reference of the Programme Directing Committee (PDC) required it to co-operate with CCC Committees, with education authorities and other interested bodies. In pursuance of this, the PDC consulted widely, sought and was given advice and assistance from a very wide range of sources. Regional (and in Strathclyde, Divisional) authorities were especially helpful in sharing their thinking, in gathering documentation from their advisory and other services, and from schools. Some of the documentation so ingathered was passed to the PDC while other materials came directly from the schools themselves. Documentation from whatever source is indicated by (D) in the lists that follow.

Acting mainly on advice from education authorities, officers and members of the Programme Directing Committee visited many schools for discussion with teachers involved in innovative work over the 10 – 14 years. Invitations, however, were also received from individual schools. All visits are indicated by (V) below.

Certain individuals gave oral evidence directly to the committee in full session, or to sub-groups. Other individuals were particularly helpful in providing written evidence and in discussion with officers or members. This help is acknowledged below.

1. REGIONAL AND ISLANDS AUTHORITIES

All education authorities responded to the Programme Directing Committee's request for information and advice. Contacts were made and visits paid to all mainland regional and, in Strathclyde, divisional authorities. A visit was paid to the Western Isles authority. Lothian Region established a 10 – 14 committee and shared its thinking, and significant papers, with PDC.

2. SCHOOLS

Alford Academy, Grampian	D	
Alness Academy, Highland, Ross and Cromarty	D	
Auchenback Primary School, Strathclyde, Glasgow	D	V
Auchenharvie Academy, Strathclyde, Ayr	D	
Auchnagatt Primary School, Grampian	D	
Balerno High School, Lothian	D	
Balmoral Primary School, Borders	D	
Ballingry Junior High School, Fife	D	V
Bankhead Academy, Grampian	D	
Barrhead High School, Strathclyde, Renfrew	D	V
Benarty Primary School, Fife	D	V
Berwickshire High School, Borders		V
Bishopbriggs High School, Strathclyde, Dunbarton		V
Breadalbane Academy, Tayside, Perth and Kinross		V
Brora High School, Highland, Sutherland		V
Buckie High School, Grampian	D	

Carlibar Primary School, Strathclyde, Glasgow		V
Carluke High School, Strathclyde, Lanark	D	V
Carluke Primary School, Strathclyde, Lanark		V
Carnoustie High School, Tayside, Angus		V
Chirnside Primary School, Borders		V
Copeland Primary School, Strathclyde, Glasgow		V
Cornaigmore School, Western Isles	D	
Cranhill Secondary School, Strathclyde, Glasgow	D	V
Culloden Academy, Highland, Inverness	D	
Currie High School, Lothian	D	
Denny High School, Central	D	
Dingwall Academy, Highland, Ross and Cromarty	D	V
Dornoch Academy, Highland, Sutherland		V
Duns Primary School, Borders		V
Dyce Academy, Grampian	D	V
Dyce Primary School, Grampian		V
Elgin High School, Grampian	D	
Ellon Academy, Grampian	D	
Farr Secondary School, Highland, Sutherland		V
Fencedyke Primary School, Strathclyde, Ayr	D	
Fetterangus Primary School, Grampian	D	
Firrhill High School, Lothian	D	
Glencryan School, Strathclyde, Dunbarton		V
Govan High School, Strathclyde, Glasgow		V
Gowriehill Primary School, Tayside, Dundee	D	
Grangemouth High School, and associated Middle Schools, Central	D	V
Greenfield Primary School, Strathclyde, Glasgow		V
Hatton (Fintray) Primary School, Grampian	D	
Helmsdale Secondary School, Highland, Sutherland		V
Hill's Trust Primary School, Strathclyde, Glasgow	D	V
Holy Cross High School, Strathclyde, Lanark	D	
Holyrood High School, Lothian	D	V
Inveralmond Community High School, Lothian	D	V
Inverness Royal Academy, Highland, Inverness	D	
Inverurie Academy, Grampian		V
John Bosco Secondary School, Strathclyde, Glasgow	D	V
John Paul Academy, Strathclyde, Glasgow	D	V
Johnstone High School, Strathclyde, Renfrew	D	
Kinloch Primary School, Tayside, Angus		V
Larkhall Academy, Strathclyde, Lanark		V
Linnvale Primary School, Strathclyde, Dunbarton	D	
Linwood High School, Strathclyde, Renfrew	D	

Lochend Secondary School, Strathclyde, Glasgow		V
Longformacus Primary School, Borders		V
Longside Primary School, Grampian		V
Maud Primary School, Grampian		V
Melvich Primary School, Highland, Caithness		V
Menzieshill High School, and associated Primary Schools, Tayside	D	V
Merksworth High School, Strathclyde, Renfrew	D	
Mintlaw Academy, Grampian	D	V
Mintlaw Primary School, Grampian		V
Nairn Academy, Highland, Inverness	D	
New Deer Primary School, Grampian	D	
Newmachar Primary School, Grampian	D	
North Kelvinside Secondary School, Strathclyde, Glasgow	D	
Old Rayne Primary School, Grampian		V
Pitfour Primary School, Grampian		V
Springhill Primary School, Strathclyde, Glasgow		V
Strathburn Primary School, Grampian	D	
St Andrew's Academy, Strathclyde, Ayr	D	V
St Andrew's High School, Strathclyde, Dunbarton		V
St Brendan's Primary School, Strathclyde, Ayr	D	
St John's Primary, Strathclyde, Glasgow		V
St John's Primary, Strathclyde, Ayr		V
St Mary's Primary School, Central		V
St Mary's Primary School, Strathclyde, Ayr	D	
St Modan's High School, Central	D	V
St Peter's Primary School, Strathclyde, Ayr	D	
St Patrick's High School, Strathclyde, Dunbarton		V
St Roch's Secondary School, Strathclyde, Glasgow	D	
Swinton Primary School, Borders		V
Thorn Primary School, Strathclyde, Renfrew	D	
Tynecastle High School, Lothian	D	
Uddingston Grammar School, Strathclyde, Lanark	D	V
Westhill Academy, Grampian	D	V

3. UNIVERSITY DEPARTMENTS OF EDUCATION

Advice was received from the following departments in response to the PDC's initial enquiry in 1982.

Aberdeen
Edinburgh
Stirling

4. COLLEGES OF EDUCATION

The following Colleges of Education submitted information, mainly from departmental sources, of research, development and resources.

Aberdeen College of Education
Dundee College of Education
Jordanhill College of Education
Moray House College of Education
St Andrew's College of Education (Bearsden campus)
St Andrew's College of Education (Craiglockhart campus)

5. COMMITTEES AND OTHER GROUPS OF THE CCC

Submissions were received from the following. Meetings were held with representatives and/or officers as indicated (M).

Committee on Gaelic	M
Committee on Special Educational Needs	M
Scottish Committee on Environmental Studies	
Scottish Committee on Expressive Arts	
Scottish Committee on Home/School Community Relationships	
Scottish Committee on Language Arts	
Scottish Central Committee on Art	M
Scottish Central Committee on Business Subjects	
Scottish Central Committee on English	
Scottish Central Committee on Guidance	M
Scottish Central Committee on Home Economics	M
Scottish Central Committee on Mathematics	
Scottish Central Committee on Modern Languages	M
Scottish Central Committee on Music	
Scottish Central Committee on Religious Education	M
Scottish Central Committee on Science	
Scottish Central Committee on Social Subjects	M
Scottish Central Committee on Technical Education	
Consultative Panel on Classics	M
Consultative Panel on Drama	M
Project Committee on Technology	
Project Committee on International and Multicultural Education	

6. INDIVIDUALS

(a) *Contributing to Meetings of the Directing Committee, in full or sub-group Sessions*

D Cook	Principal Adviser, Primary Education, Lothian Region
Professor N A Furness	University of Edinburgh (Chairman, Scottish Central Committee on Modern Languages)

Dr W A Gatherer	Chief Adviser, Lothian Region
D Hollingsworth, HMI	Department of Education and Science
E S Kelly, HMI	Scottish Education Department
I M MacAskill, HMI	Scottish Education Department
J E C McBeath	Department of Education, Jordanhill College of Education
D McLaren	Adviser in Mathematics, Strathclyde, Lanark Division
J G Mulgrew	Divisional Education Officer, Strathclyde, Dunbarton Division
Professor J Nisbet	Department of Education, University of Aberdeen
Janet Shucksmith	Department of Education, University of Aberdeen
W P Thomson	Department of Education, Jordanhill College of Education

(b) *Contributing in written communication, and/or providing extensive documentation, and/or in collaboration with Members and/or Officers of Programme Directing Committee*

J Cummine	Department of Mathematics, Aberdeen College of Education
Dr S Cunningham	Department of Education, Aberdeen College of Education (Research on Curriculum Structure in S1 and S2)
R Duncan	Assistant Director of Education (Primary), Grampian Region
D J R McDonald	Adviser in Mathematics, Highland Region
Wilma McDonald	Head of Geography Department, Aberdeen College of Education
T H Masterton	Head of Geography Department, Moray House College of Education (Geography 10 - 14; and Environmental Studies in the Primary School)
J Muir	Adviser in Primary Education, Highland Region (Mathematics development)
J Page	Assistant Head Teacher, St Modan's High School
R C Scott	Assistant Head Teacher, Prestwick Academy
G Smith	Depute Head Teacher, Mintlaw Academy
Mary Tawse	Adviser in Primary Education, Grampian Region

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